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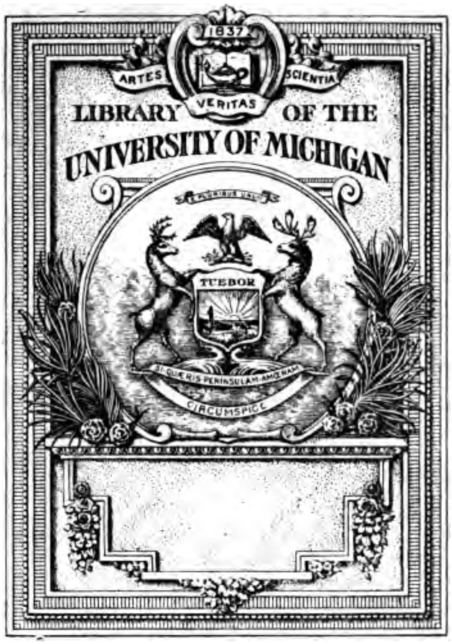
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THE

EDINBURGH
MEDICAL AND SURGICAL
JOURNAL:

EXHIBITING

A CONCISE VIEW

OF THE

LATEST AND MOST IMPORTANT DISCOVERIES

IN

MEDICINE, SURGERY, AND PHARMACY.

VOLUME TWENTY-SIXTH.

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Communications have been received from Messrs **Brown**, **Fraser**, **P. C. Gibson**, **Graham**, **Laing**, **Nivison**, **Kift**, and **Sym**.

The following Publications have been received:—

An Inquiry concerning that Disturbed State of the Vital Functions, usually denominated Constitutional Irritation. By Benjamin Travers, F. R. S., Senior Surgeon to St Thomas's Hospital, &c. &c. 8vo. London, 1826.

An Address to the Inhabitants of Lancashire, and of the adjoining Counties, on the present State of the Medical Profession, with Remarks on the Elementary Education of the Student, and the best Means of its Acquirement. Intended to show the Practicability and Importance of establishing a School (on a more extended scale) in Manchester, for the Cultivation of Medical and Chirurgical Knowledge. By Thomas Turner, Member of the Royal College of Surgeons, London, Lecturer on Anatomy, &c. 8vo. London, 1825.

Practical Observations in Surgery; more particularly as regards the Naval and Military Service, illustrated by cases, and various official documents. (2d Edit.) By Alex. Copland Hutchison, Late Surgeon to the Royal Naval Hospital at Deal, &c. &c. 8vo. Lond. 1826. 12s.

An Exposition of the State of the Medical Profession in the British Dominions, and of the Injurious Effects of the Monopoly by Usurpation of the Royal College of Physicians in London. 8vo. Lond. 1826.

Report of the Managing Committee of the Whitworth Hospital, Drumcoudra; with the Statement of the Accounts, the List of Subscribers, and the Medical Report for the year ending 5th February 1825. 8vo. Dublin, 1825.

An Oration, Delivered before the Medico-Botanical Society of London, at the Commencement of their next Session—Friday, 14th October 1825. By John Frost, F. S. A. F. L. S., Member of the Royal Institution of Great Britain, and Director of the Medico-Botanical Society. 4to. London, 1825.

Botanical Terminology, or Dictionary, explaining the terms most generally employed in Systematic Botany. By G. N. Lloyd, Member of the Plinian Society. 12mo. Edinburgh, 1826.

The Medical Evidence relative to the duration of Human Pregnancy, as given in the Gardner Peerage cause, before the Committee for Privileges of the House of Lords, in 1825-6, with Introductory Remarks and Notes. By Robert Lyall, M. D. F. R. S. &c. &c. &c. 8vo. Lond. 1826. Price 4s. 6d.

NOTICES TO CORRESPONDENTS.

Trial of Medad Mackay, for the Murder of his Wife before Chief Justice Spencer, 1820. By M. T. C. Gould, Stenographer. 8vo. Albany, 1821.

An Essay on the Remote and Proximate Causes of Phthisis Pulmonalis, being the Essay to which the Prize was adjudged for the year 1825, by the New York State Medical Society. By Andrew Hamersley, M. D. 8vo. Philadelphia, 1825.

The Edinburgh Journal of Medical Science. No. II. for April 1826.

The Medico-Chirurgical Review. (New Series.) No. VIII. for April 1826. 8vo. Lond.

The Carolina Journal of Medicine, Science, and Agriculture. Conducted by Thomas Y. Simons, M. D. and William Michel, M. D. Vol. I. No. IV. for December 1825. 8vo. Charleston.

Do. - do. - New Series. Vol. I. No. I.

The North American Medical and Surgical Journal. Conducted by H. L. Lodge, M. D. Franklin Bache, M. D. Charles D. Meigs, M. D. B. H. Coates, M. D. and R. La Roche, M. D. No. II. for April 1826. 8vo. Philadelphia.

The New York Medical and Physical Journal. Edited by John B. Beck, M. D. Fellow of the College of Physicians and Surgeons of New York, &c. &c. Nos. 13, 14, 15, 16, for 1825.

De Functionibus Nervorum Faciei et Olfactus Organi, a Daniele Fred. Eschricht. 12mo. Hafniæ, 1825.

Dissertationis de Ictero, particula prior continens varias de causa hujus morbi proxima Sententias, a Seligmann Meyer Trier. 12mo. Hafniæ, 1825.

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1. JULY 1826.

PART I.

ORIGINAL COMMUNICATIONS.

Art. I.—*Some remarks on the Fever most prevalent in New Brunswick, North America; with a Sketch of the Topography and Climate of that Province.* By Alexander Boyle, M. D., Fellow of the Royal College of Physicians of Edinburgh, and Surgeon to his Majesty's Forces. Communicated by Dr Shortt.

THE phenomena of the animal economy are so frequently affected by the influence of climate, and the operation of circumstances connected with situation and soil, that the consideration of these subjects necessarily precedes the history of a numerous class of diseases; and may, therefore, not improperly engage a part of this communication, which has for its object a brief account of the Febrile disease most prevalent among the troops and other inhabitants of the province of New Brunswick.

To enter into it, however, so fully as its importance demands, would exceed the limits to which I must confine myself on this occasion; and I shall, therefore, take only a rapid sketch of certain topographical features, and of some of the more important meteorological facts which seem to impress a peculiarity of character on the diseases which usually come under our view in that part of the world.

The province of New Brunswick, which forms a valuable and interesting portion of the British possessions in North America, extends along the shores of the bay of Fundy, which separates it from the province of Nova Scotia, nearly in the direction of N. N. E. and S. S. W. On the north and east, it is bounded by the gulf and river St Lawrence; and towards the possessions of the United States it joins the district of Maine; the city of St John, which is situated at the mouth of the river of that name, lying in lat. 45° 12′ N., and long. 65° 15′ W.

About the year 1783, soon after the termination of the American contest, it afforded an asylum to the British subjects who preferred living under the protection of the parent state; since which time, its population, though fluctuating, has greatly increased, and has, for some years past, been stated at nearly sixty thousand.

This province exhibits considerable variety of soil, as well as irregularity of surface; but it can nowhere be said to be mountainous, or remarkably elevated above the level of the sea. Near the coast, its aspect is rugged and barren; but, in a country of so great extent, there are also to be found, as may be supposed, wide tracts of rich and level ground. Except along the banks of rivers, whither the early settlers were invited by the fertility of soil, and greater facility of access, the face of the country presents an uniform impenetrable forest, everywhere intersected by rivers, and diversified with lakes. It is, indeed, apprehended, from its obvious geological features, that, at some remote period, this province was traversed by a continued chain of lakes, covering a vast extent of surface, and stretching north east in the direction now followed by the river St John, which appears to intersect their empty basins; and that the important changes visible at this day were finally effected, when, by gradual attrition by means of the tides, which rise to the height of thirty feet, the barrier which opposed the river at its present egress into the sea was weakened, and at length overcome, affording a free discharge of the accumulated waters, by a passage considerably below the level of former outlets; the surface they had covered being now left fertilized by alluvial mud, and capable of a high degree of cultivation. Throughout this tract, measuring a distance of nearly 600 miles, as marked by the course of this noble river, we may observe the successive depression of its banks, following the gradual decrease of the waters. In several places we find it still expanding itself into spacious sheets of water, studded with small islands, each forming a little archipelago. Many of those islands scarcely rise above the surface of the water; and about the beginning of May, in consequence of the melting of the ice and snow, they are completely covered, at which period the river overflows its banks to a great depth, breaking down every obstacle, and depositing in its course the debris of the more elevated districts.

The coasts of this province are fenced in, chiefly by rocks of oolite, greywacke and flint-slate. In contact with these occur vast beds of limestone and clay-slate, and breccia is met with at no great distance, large rolled masses of which are in different places found scattered over the surface. As we recede from the coast, granite sometimes makes its appearance, though the schistose and calcareous form the predominant class of rocks, as is even conspicuous in the general outline of the country. The province abounds in coal, iron and native copper; but its mineral riches have not hitherto been explored, nor have they engaged that attention of the capitalist which they seem to deserve.

The winter in New Brunswick is protracted and severe; but the climate, nevertheless, is extremely healthy. In regard to the succession of the seasons, as well as to temperature, a remarkable difference is observed between such situations as are near the coast, and those at some distance from it, and the farther we advance into the interior, the more obvious does this difference become. There, the vernal suns first re-animate nature; there, also, she first assumes the solemn attire of winter. In inland situations, Fahrenheit's thermometer, during summer, commonly ranges between 80° and 100°, and in the month of February usually stands between —15° and —20°; and has sometimes, though rarely, been observed even as low as —36°. Premature frosts have also been occasionally observed in July; but this is a rare occurrence, and they usually are much later in appearing, and snow seldom falls in great quantity before the end of November, after which date, the whole country, during the five following months of the year, lies buried beneath it. About the beginning of May, vegetation begins to adorn the face of nature, and, rapid in its progress under the influence of a powerful sun, again hastens to maturity and decay; the whole process being completed in less than five months. Severe as this climate is, it may be expected, that, as the country becomes more thickly inhabited, when its forests are cut down, and the lands cultivated, an important change will, by these means, be ultimately effected. Yet, though in the same parallel of latitude with some of the finest countries in the world, as Lyons, Turin, Cremona, &c., there will always exist natural causes immutably connected with its relative position on the surface of the globe, which seem for ever capable of preventing it from vying in beauty and luxuriance with those highly favoured regions. And it is apprehended, the winds which sweep the extensive inland lakes lying to the north and west-ward of the province, as well as the vast fields of ice which are drifted from the Polar seas, along the coasts of Labrador and Nova Scotia, will always materially influence the seasons in this part of the world. The winds which blow from the south and from the east, passing over a great extent of sea, come loaded with vapour; and it often happens that the city of St John, which is situated on the coast, is enveloped for several days together in thick fog, while, at the distance of only a few miles from the sea, the atmosphere is perfectly serene and clear. These fogs generally prevail towards the end of summer, and being dependant on the prevailing winds, and brought by those which pass over the gulf-stream, may, perhaps, be accounted for, by supposing that the water which is evaporated from that surface, being wafted by them into an atmosphere of much lower temperature, as over ice floating towards the south, is speedily condensed, and descends along the coast in the form of fog or rain.

Cold and moisture are, indeed, powerful agents in deranging the healthy action of the human body, and are observed to be most fruitful parents of disease. Observation also teaches us, that it is not merely to the intensity or duration of those powers, the production of many diseases arising from them is to be ascribed, but to the sudden transitions which, in some countries, take place, affecting those sensible conditions of the atmosphere with which we are surrounded. "Αἱ μεταβολαὶ τῶν ὡρέων μάλιστα τίκτουσι νοσήματα· ϗ ἐν τῇσιν ὥρῃσιν ἁι μεγάλαι μεταλλαγαὶ, ἤ ψύξιος, ἤ θάλψιος, ϗ τ᾽ ἄλλα κατὰ λόγον οὕτως.[*] We all, perhaps, readily acquiesce in the truth of this aphorism; and it was remarked, that, among the troops stationed near the coast, the number of acute diseases attributable purely to atmospheric influence on the human body, greatly exceeded the number of like diseases which occurred at stations remote from the sea; and it was also observable, that their character, as well as frequency, was affected by these circumstances of relative topographical situation. In the interior, the atmosphere is less charged with humidity; and, at all seasons of the year, the temperature is much more steady than on the shores of the Bay of Fundy, where, in consequence of change of wind, (which, in the latter situation, is always very variable,) the temperature often rises or falls thirty or even fifty degrees in the course of a few hours. In many of those settlements, however, along the banks of the river St John, which, as I have already observed, are inundated about the beginning of spring, we occasionally meet with diseases of the hepatic system; but we hear not that agues prevail as in similar situations in England, unless when the baneful auxiliary, intemperance, contributes to their production ; a vice which, it must be said, has few votaries among that class of the community whose occupation consists in rural and agricultural labour.

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[*] Hipp. Aphor. Sec. 3. 1.

Of the febrile diseases, that which attracts most attention, as occasionally appearing among the troops, is a fever resembling, in its characteristic features, the common autumnal remittent, or bilious fever of warm climates, connected with inflammatory affections of the stomach and intestinal canal, and attended by congestion of the vascular system of the liver, and derangement of the functions of that organ. This fever has also proved the most formidable among the inhabitants of New Brunswick. It, however, excited no unusual apprehensions, until an occasion of great mortality occurred in the family of an individual several years ago, and having erroneously received the appellation of TYPHUS, was viewed as a disease of a highly contagious nature.

It is not unfrequently met with among the seafaring people of New Brunswick who are employed in the navigation of the Bay of Fundy ; and I have more than once, during my residence in that province, observed some severe cases among the troops, even on the short passage from Halifax N. S. to St John. In small or crowded transports, it is a common practice among soldiers, in spite of every precaution, after exposure during the whole day to the heat of a powerful sun, to pass the night on deck, without covering, under heavy dew, causes which, especially in warm latitudes, are always fraught with danger. In explaining these effects, I am disposed to consider the above *evident* conditions of the atmosphere as sufficient for their production, without having recourse to the agency of any other quality whose existence, until clearly demonstrated, must, in a great measure, be deemed gratuitous.

The fever in question, in all its degrees, it is now generally admitted, does not originate from contagion ; and, if we have been able invariably, as it is imagined, to trace it distinctly to other causes, and such as are cognizable by our senses, it may reasonably be questioned, how far we can philosophically admit the operation of such as are obscure, or of doubtful existence. In the case of CONTAGION, however various the diseases arising from that source, they are uniformly the result of their own peculiar *specific* cause, without the necessary concurrence of any other ; and this circumstance seems to belong to it alone, as the distinctive character of a subtle essence whose existence, as a cause of disease, we are warranted in admitting, solely from our knowledge of its effects. The concurrence of putrid effluvia may, no doubt, heighten the malignity, but is not essential to the production of this fever.

Its first approach is announced in the same manner as other febrile affections, by rigors, headach, and lassitude; and these symptoms are generally preceded by irregularity of the alvine evacuations, nausea, and bilious vomiting. The pulse is often weak, and great prostration of strength, languor, and uneasiness in the epigastrium, accompany the disease throughout its whole course. In these cases, the symptoms at the commencement are seldom such as to denote a violent disease, and the patient lingers for some days under what generally, among the people, obtains the name of a "*low fever*." In young persons, and those of a robust and plethoric habit, a slight cough is sometimes present, the general febrile excitement is stronger, and other symptoms denote a tendency of the disease to assume the character of acute hepatitis; and under this latter aspect, it most commonly appears among the troops. In either case, about the fifth day, the conjunctiva and skin acquire a yellowish or dingy hue; and about the same period, delirium very often sets in. At an early period, a tendency to remission is observed, which soon becomes very obvious; and in the course of the disease, distinct intermissions take place; the revolutions of the febrile paroxysms most commonly observing the tertian type. I have never observed in this fever, as it occurs in New Brunswick, (one case only excepted,) petechiæ or any of those hemorrhages which form so common a symptom of the more malignant varieties which prevail in southern latitudes. Various as are the degrees of violence under which this fever presents itself, we, nevertheless, may easily recognise the affinity which obtains, whether it appear in the more southern parts of the western hemisphere, on the shores of the Mediterranean, or in the latitudes of Belgium and New Brunswick.

The disease, in all climates where it usually prevails, makes its appearance about the beginning of autumn, at the same time that other diseases of the biliary organs, the causes of which are readily acknowledged, are known to occur. The changes which take place at this season, as already noticed, in the sensible qualities of the atmosphere, and which are such as affect its temperature and humidity, are most sudden and severe; and, in proportion as those changes are aggravated, or the facility of their operation favoured by circumstances of constitution or mode of life, the epidemic which follows is either mild or severe. Never, indeed, does it appear with greater malignity, than when, with the usual influence of season, other causes conspire to assist the operation of that agent, especially exposure to wet; and, among soldiers, it was frequently traced to this cause. Causes of this nature are, however, in colder regions, as that of New Brunswick, more slow in their operation, never producing those violent and sudden derangements which take place under more southern latitudes. A predisposition, however, seems to be formed, and at some uncertain interval, differing in different individuals, according to the numberless varieties observable in the constitutional idiosyncrasies of men, on the application of some exciting cause, as intemperance or checked perspiration, the disease makes its appearance; and, on this principle, we may account for cases of it not unfrequently occurring in this province in the months of January and April. Here, also, it chiefly invades the middle order, while the labouring class and those of the higher class of society, though frequently exposed, yet, being more habituated to vicissitudes in the state of the atmosphere, or better protected against them, are equally exempt. Its production is much favoured by a sedentary mode of life, which, with the confinement to close apartments, required by the occupations of many belonging to the middle class of the community, immoderately heated by stoves, not only renders them more sensible to the above changes, but also more subject to dyspeptic and other disorders of the digestive organs, whereby they become its common victims. It thus happens, that the disease sometimes appears in a family, successively attacking every individual under the same roof without extending farther.

Among many other circumstances influencing the health of troops in quarters, none are so frequent as those depending on the nature of their accommodation. The barracks formerly occupied by those stationed in St John, had long fallen into complete decay; and, besides the obvious objection to one of them, whose situation exposed it to inundations at every tide, they scarcely afforded shelter from the inclemency of the weather. Since these have been abandoned, and the soldiers removed to a spacious building newly erected, where they enjoy greater comfort of every kind, cases of this fever, and of every other acute disease, are far less frequent than formerly. The introduction of open fire-places, instead of cast-iron stoves, whereby the pernicious effects of high temperature are effectually guarded against, while a free circulation of pure air (a circumstance of no small importance in an apartment containing thirty or forty persons) is also provided for, must likewise be considered a very great improvement.

I may, perhaps, be allowed to take this opportunity of noticing a practice, sometimes followed in warm climates, of frequently drenching the floors with water, which is extremely injurious to the health of soldiers. When the floors are made with a mixture of lime and clay, as is not unfrequently the case in the Mediterranean, or paved with tiles, much of the water soaks through them, and they long retain the moisture; and, under a current of air, they afford a constant evaporation, and fill the apartments with humidity. This, I had more particularly an opportunity of observing in Sicily, in barracks which had been recently constructed on the isthmus of Melazzo, on a clean dry beach, about 200 yards from the sea, having a free exposure to the west, and being in a situation in every respect well chosen. Cold and moisture were here conjoined; and the soldiers experienced vicissitude of heat as often as they sought shelter in them from the oppressive influence of a powerful sun, generally placing themselves, half naked, in the strongest current of air. I am aware that the situation alluded to may be deemed unhealthy for other reasons, but I can by no means allow that the sickness which prevailed among the troops who occupied those barracks, was occasioned by any other exhalations from the *soil*, than that of *moisture alone.* If soldiers in Britain or New Brunswick, sleep on such floors, badly protected, sickness will almost inevitably follow; and, it is imagined, there would be little doubt entertained as to the cause.

It has been already observed, that the fever of New Brunswick, now under consideration, shows a tendency to assume the intermittent form, the cause of which may, perhaps, ever elude our research. We are, probably, however, not very far from the truth, when we refer this tendency of fevers to observe a periodical regularity in the return of their paroxysms, to the same general law of our constitution which regulates the diurnal returns of sleep and watching, as well as of our natural appetites and customary evacuations in a state of health; and by which other movements in the animal economy equally difficult to be explained, are governed.

In persons subject to chronic affections of the biliary organs, nothing is so apt to produce slight accessions of fever, as irregularities of the *primæ viæ* arising from the less cautious indulgence in the gratifications of the palate. Indigestion is a common consequence of such excesses; and, on many occasions, a well-formed nocturnal paroxysm succeeds, which is most effectually removed by purgative medicines. Other diseases which are allowed to be frequently periodical in their attacks, and which are produced by irritation of different kinds in the alimentary canal, are often most speedily cured by the same means; by which the offending matter is either expelled, or its effects corrected.

In southern latitudes, where the progress of the disease is much more rapid than in the province of New Brunswick, copious blood-letting, both local and general, as I have elsewhere* recommended, must be had recourse to at an early period, and its efficacy has since been confirmed by ample experience. The cases of this fever, however, which occur in this portion of British America, are generally protracted in their duration; and, if neglected at their commencement, seldom terminate before the third week. The determination to the abdominal viscera seems to partake more of the nature of congestion than of active inflammation. In all cases, copious evacuations from the intestines are particularly indicated, and unless in robust and plethoric patients, or at the first onset of the disease, I have seldom employed the lancet, but trusted chiefly to free catharsis kept up during its whole course; the languor, uneasiness at the epigastrium, and restlessness, being most effectually relieved by frequent profuse discharges by stool. I have never, under an apprehension of producing debility, been deterred from the free use of medicines of this class, and I am convinced by much experience, that, when the disease assumes the intermittent form, the removal of irritation, of whatever kind it may be, from the *primæ viæ*, discharging the contents of the biliary reservoirs, and obviating the effects of local congestion, are more efficacious in preventing a return of the paroxysm than any other means I have employed.

I have, generally, both in Sicily as well as in New Brunswick and on the eastern coast of Spain, observed that, during those seasons in which dysentery was most prevalent, it seemed, in some measure, to take place of the bilious remittent fever also peculiar to the same season; and though this may, perhaps, be owing to causes not easily ascertained, it furnishes a fact which throws some light on the relation between those diseases, and may suggest further explanation of the principle on which purgative medicines are recommended, and in both diseases found equally useful.

Though I have sometimes succeeded by a combination of neutral salts and antimonial medicines, employed so that their effects should be fully directed to the intestines, yet I am convinced, that, without the aid of the mercurial influence, they will rarely be found effectual. I have generally, indeed, availed myself of the alternate use of those means, yet mercury was the remedy on which I placed my chief reliance.

Although, at one time, I was in the habit of administering this medicine in the form of submuriate in small doses frequently repeated, further experience has satisfied me as to its superior efficacy when exhibited in large quantities, and after the manner first recommended by the enlightened author of the work on diseases of tropical climates. I am seldom satisfied until I perceive its influence on the system by a slight affection of the gums, after which I suspend its use, and have no further recourse to it, unless unfavourable symptoms recur during convalescence, and which I have, indeed, very rarely met with.

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* Edin. Med. and Surg. Journal, April 1812.

An alarming state of the symptoms, or an advanced stage of the disease, requires the exertion of our utmost energies. On such occasions, I generally combine the use of calomel with the free use of mercurial friction; for the speedy saturation of the system with this mineral can alone arrest the progress of the disease, and prevent the disorganization of parts essential to life. Sometimes its effects are slow in making their appearance, while the impending danger prompts its rapid introduction; and though I may, sometimes, in consequence thereof, experience the mortification of witnessing some of its unpleasant effects in the form of ulceration of the tongue or gums, I am consoled by the conviction, that by more feeble and temporizing measures, I must have compromised the life of my patient. The happy effects produced by the combination of opium with calomel are now well known; and I have nothing to add to what has already been said on this subject, except my testimony to its great utility.

With the affection of the gums, a copious discharge of dark-coloured stools, containing large quantities of mucus in the form of membranous or spiral flakes, announces that the disease has begun to yield; when the mercurial preparations may be discontinued, and neutral salts with bitter infusions substituted in their place.

In well marked cases of this disease, I am not an advocate for the use of cold affusion; but I have experienced the best results from frequent ablutions, during the exacerbations, with cold or tepid water, as circumstances might indicate. Cold drinks, and ripe acid fruits, are highly beneficial, and extremely grateful to the patients, and I encourage a free indulgence in the use of them at all periods of the disease.

I have occasionally directed the use of the nitric acid largely diluted with water, as the common drink in such cases; and am inclined to think it may prove serviceable, by its chemical action on the vitiated secretions accumulated in the intestines; and during convalescence, which is always tedious, it may also, in the same form, be advantageously employed as a tonic.

The following cases, selected from many similar, are subjoined in illustration of some of the foregoing remarks:

CASE I.

A lad about 25 years of age, healthy and of regular habits, was seized on the 19th November, towards afternoon, with a severe rigor, and on the 21st was admitted into hospital. He had, for several days, previously to the disease assuming a decided form, been affected with nausea, headach, giddiness, and irregular state of the bowels; and the only cause to which he could assign these complaints, was exposure to wet and cold after having been much heated by violent exercise.

In addition to the general symptoms of pyrexia, the disease was accompanied with pain in the epigastrium, and a dull uneasy sensation in the region of the liver. The countenance on the fourth day assumed a dirty yellowish tinge; and a pustular eruption, a symptom I had often observed in fevers of this nature in the Mediterranean, began, about the same time, to appear about his mouth. The cure was accomplished, as in several cases of a similar nature which had occurred a few months before, on the first arrival in the province of the regiment to which he belonged, by cold ablution during the exacerbations, and a free use of saline and mercurial purgatives. During his convalescence, however, he was, unfortunately, seized with a severe catarrhal affection and slight inflammation of his eyes, when the fever, with bilious symptoms, returned with redoubled violence; and, though yielding eventually to the same general plan of treatment which had been found successful in the first attack, entailed on him a long and tedious state of convalescence. During the whole course of the fever, the alvine discharges were of a dark green colour; and the languor and uneasiness in the epigastrium were always relieved, on copious and frequent evacuations being procured by means of purgative medicines.

CASE II.

A man about 35 years of age, of a strong athletic make, and a sailor, was brought to the provincial marine hospital of New Brunswick, on the evening of the 5th of October 1822, from a low boarding-house in town, where, it appeared, he had lain sick about eight days in a small apartment, with others also affected with fever. He was in a state of delirium, had a wild stare, his countenance was flushed, and the conjunctiva somewhat injected with blood. He could not put out his tongue, and his mouth was parched. He was very restless, he sighed frequently, and his breathing was quick and anxious, but there was no cough. He could give no account of his feelings; but, on pressure on the epigastrium, he withdrew himself from the hand, and gave evident signs of pain. The pulse was 100 in the minute, small, weak, and tremulous. The skin was dry, and the temperature of the surface scarcely above the healthy standard. A large blister was applied over the epigastric region, and he was ordered to have ten grains of calomel with four of antimonial powder immediately, and to be repeated after an interval of three hours.

6th.—10 A. M. He had only one stool during the night, by which it appeared his bowels were in a torpid state. The blister had been torn off, and produced no effect. He is now somewhat more sensible to external objects, and is able to put out his tongue. He is still, however, very uneasy, lies on his back, breathes quick, and can give no account of his symptoms. His countenance is less florid, and the conjunctiva still injected. His skin is hot and dry. Pulse 100 and weak.

The whole head was ordered to he shaved, and to be constantly bathed with cold water as long as it continued hot. A blister was applied to the nape of his neck, and the calomel and antimonial powder repeated as last night.

2 P. M. Soon after last visit he became very restless, and was with difficulty confined to bed. He took the medicines ordered, and has had several very copious loose stools of a dark green colour, and highly offensive smell, since which time he has been much more composed, answering some questions correctly. There is more exertion of muscular strength than when admitted into hospital; tongue white, and very much loaded in the centre, but clear and moist about the edges; pulse fuller and less hurried; he breathes with more ease; eyes still suffused; skin hot, and some moisture begins to appear about his shoulders. His head and chest were constantly bathed with cold water when above the natural temperature; ten grains of calomel were given, and a solution of two ounces of sulphate of magnesia, with two grains tartrate of antimony, in eight ounces of water, was administered in doses of two ounces every hour.

7th.—10 A. M. He took about four ounces of the mixture, and had three copious liquid stools of mucous appearance and dark green colour, but containing no natural feces. The blister on his neck produced the desired effect on the skin. He has had no vomiting during the night; was occasionally delirious; is drowsy; says he has very little uneasiness except in the stomach; eyes and countenance less florid; skin not much above the natural temperature; breathing not too quick; pulse 90, fuller and regular. He was ordered two doses of calomel of ten grains each, to be taken after an interval of three hours; the solution of salts was repeated, and the cold ablutions continued as often as indicated by the state of the surface.

7 P. M. He had four evacuations from his bowels since last visit, of the same appearance, and has been perfectly composed and sensible. He is now able to rise when he has occasion to go to the stool. He complains now of much pain on pressure of the right hypochondrium, but of none in the epigastric region; there is no nausea, and the abdomen is not tense; no thirst; tongue clean and moist; countenance florid, and left eye suffused with blood; breathing natural; pulse 85, weak and soft. Temperature of the surface still above the natural standard. Continue the mixture and cold ablution.

8*th*.—10 A. M. He had a great many copious liquid stools during the night, approaching, for the first time, to the natural colour. He appears a good deal exhausted; is perfectly sensible; has no headach, but complains of pain on pressure of the right hypochondrium; no nausea; temperature of skin natural; pulse 75, weak. No medicine.

3 P. M. The temperature of the surface is much increased since last visit—the skin is dry; the countenance flushed, and eyes suffused; had no stool; pulse 80, and fuller than in the morning; quite sensible. The calomel and antimonial powder were repeated, and the cold ablution had recourse to when indicated.

9*th*.—10 A. M. He passed some liquid stools during the night, containing little feculent matter, but approaching to the natural colour. He is perfectly sensible, and has no pain except on pressure of the right hypochondrium. Tongue clean and moist; eyes still rather suffused; temperature natural; pulse 75, soft, and of natural strength. He was ordered ten grains of calomel.

7 P. M. He had no stool since last visit, and is again more restless and uneasy. Pressure under the short ribs of the right side gives great pain; no cough; breathing easy; tongue parched; temperature increased; pulse 80, and fuller than in the morning. The cold ablution and the purgative solution were ordered.

10*th*.—10 A. M. He had two copious loose stools during the night. He is always drowsy and found asleep; tongue dry and furred; he is perfectly sensible; temperature natural; pulse 70, and of natural strength.

2 P. M. He had two copious loose stools since morning, approaching more to natural colour, and says he always experiences great relief after copious discharges of this kind. Temperature increased, and countenance more flushed; pulse 70, full, strong and regular. Repeat the calomel and cold ablution.

11*th*.—10 A. M. He had three copious stools since last visit, and is less drowsy. His gums are a good deal affected by the mercury. Except on the 6th, he has had no sweating since his admission into hospital. Countenance not flushed; temperature natural; tongue clean and moist; pulse 60, full and regular. He was ordered to take two doses of the purgative solution as formerly.

2 P. M. He has taken the medicine as directed; tongue clean; no flushing of countenance; skin rather hotter than in the morning; pulse 60, full and regular. Continue the mixture.

12*th*. He took the mixture, which produced a great many very copious liquid evacuations by stool, of natural colour. Says he is languid; has no pain, except in the right hypochondrium; no flushing of countenance; tongue clean; temperature natural; pulse 55, and weak; no medicine; he was ordered to take some beef-tea.

13*th*. He slept well last night. Had no stool; feels much better; tongue clean, and moist; has no pain; pulse 50, weak and regular; temperature natural; no medicine; beef-tea.

14*th*. He continues as yesterday.

15*th*. Bowels open; evacuations natural; pulse 45.

16*th*. Bowels confined; skin hot; pulse 50. He was ordered to take an ounce of ol. Ricini.

17*th*. He was frequently purged; tongue clean; skin natural; pulse 50. Ordered beef-tea.

18*th*. Convalescent.

He was directed to take daily, during his recovery, a small quantity of the nitric acid, plentifully diluted.

A Table exhibiting the highest and lowest degrees of temperature, with the state of the weather, as observed on the coast, and at a distance of about fifty miles from the sea, from October 1, 1818, *to September* 30, 1820.

Station and Dates.	Thermometer.		Winds.	Weather.
	Max.	Min.		
1818.				
Oct. Inland	67°	25°	W. NW. E. SE.	Fine, frost towards end.
Coast,	65	30	W. S.	
Nov. Inland	62	14	N. W. E. NE.	Cloudy, showers, snow.
Coast,	60	20	SW. W.	Fine, serene sky.
Dec. Inland	60	— 15	NW. SE. NE.	Clear, snow.
Coast,	45	— 18	N. NW.	Clear, much snow, high wind.
1819.				
Jan. Inland	46	— 18	N. W.	Clear, fine, snow.
Coast,	50	32	S. SW.	Mild, fog, rain, no snow, unusual
Feb. Inland	48	— 14	NW. SE.	Clear, much snow.
Coast,	48	33	S.	Much fog, rain, mild, snow gone.

Station and Dates.	Thermometer.		Winds.	Weather.
	Max-	Min.		
1819.				
Mar. Inland	50	— 4	NW. NE. S.	Clear, much snow.
Mar. Coast,	32	— 15	N. NW. NE.	High wind, clear, much snow.
April, Coast,	70	10	very variable.	Mild by day, and frost at night.
May, Coast,	80	25	Do.	Mild, rain, fog.
June, Coast,	86	54	S. SW. NW.	Fog, clear towards end.
July, Coast,	84	70	SW. W.	Fine, dry.
Aug. Coast,	82	65	N. E. S.	Sultry, cloudy, showers.
Sep. Coast,	82	60	S. W. E.	Cloudy, rain, and thunder.
Oct. Inland	83	20	NW. W. E. SE.	Fine, sultry, snow towards end.
Oct. Coast,	76	40	SW. W. NW.	Much rain, cloudy, frost.
Nov. Inland	55	10	S.SW.SE.E.Nw.	Much rain, snow, clear, frost.
Nov. Coast,	70	28	N. NW. SE.	Much rain, dry, and pleasant.
Dec. Inland	44	— 6	NW. W. S. SE.	Rain, sleet & snow every day, mild.
Dec. Coast,	60	— 5	W. N. W.	Pleasant,
1820.				
Jan. Inland	65	— 5	NNW. NE.	Clear, much snow.
Jan. Coast,	40	— 17	W. NW.	Clear, snow.
Feb. Inland	70	— 19	NW. NNE.	Clear, mild towards end.
Feb. Coast,	50	— 15	W. NW. NE.	Clear, cloudy, snow.
Mar. Inland	74	— 5	NNE.	Much snow, rain, high wind.
Mar. Coast,	54	— 3	NW. NE.	Clear, much snow.
Ap. Inland	74	12	E. SE. NW. W.	Fine.
Ap. Coast,	64	32	W. SW.	Dry, serene.
May Inland	78	27	NE. SE. S. SW.	Mild, rain and fog, frost.
May Coast,	70	40	SE. W.	Fog, rain.
June Inland	98	32	S. SE. N. SW.	Heavy rain, thunder.
June Coast,	75	48	SW. S.	Fine, cloudy.
July Inland	99	44	S. SW.	Very fine, showers, thunder.
July Coast,	84	50	SW. S.	Serene, dry.
Aug. Inland	94	44	W. S. SW.	Dry, dews at night.
Aug. Coast,	82	45	W. S. SE.	Fine, rain, high wind.
Sep. Inland	92	31	W. SW. NW.	Fine, dew, fog, frost.
Sep. Coast,	78	32	SW. S. NE.	Dry, serene, fog.

ART. II.—*Observations on the Leprosy of Madeira.* By C. HEINEKEN, M. D.

IN the 81st number of the Edinburgh Medical and Surgical Journal (October 1824) is a very instructive and interesting paper by Dr Kinnis, on the Elephantiasis of the Isle of France; and as he invites descriptions of it in different countries, I have thought that some particulars of that which exists here, and which I consider to be unequivocally the Syrian or Arabian leprosy, or *ancient* Elephantiasis, may not be unacceptable, especially as twenty years have nearly elapsed since Dr Adams published his account; and as I am not aware that any subsequent notice has been taken of it, except by Dr Gourlay in the year 1811. He has quitted the island, never to return; and I am a resident upon it, with no higher ambition than to sink in oblivion all prospects of professional advancement which I might once have cherished, and no other hope than to delay for a while the inevitable termination of a fatal disease.

The Lazaretto appropriated for the reception and maintenance of those afflicted with leprosy, is placed on a cliff at the western extremity of the city of Funchal. The situation is airy, dry and salubrious, but the building itself small, and admirably adapted, by its internal arrangement and construction, for nurturing and maturing the fomites of contagion, did any exist. It contains at present, 11 men, and 7 women; and so far from pretending to be an institution, either for their cure, or (by secluding them from intercourse with the rest of the population,) for preventing their infecting others, it is simply a *poor-house* for a *particular class* of paupers, and subjected only to such wholesome laws as every poor-house necessarily requires.

Dr Adams was, I am sure, a man of too good taste, and too correct judgment, to have arrayed his introduction to the Lazaretto, (under the immediate sanction of his " Excellency the Governor," and attended by " Major Patrone, inspector of artillery, and interpreter-general of the island;" " A resident merchant;" " The inspecting officer of the Camera;" " The chaplain of the hospital," and a " midwife,") in an unnecessarily formal and imposing garb. In the present day, at all events, no such " pomp and circumstance" are required; for I have made repeated visits to the same place by the simple permission (asked more as a matter of courtesy and etiquette than necessity,) of the attendant physician, Dr Vieira. It will, therefore, convey the best idea, both of the establishment and the character of the disease, to an English reader, who cannot well divest his imagination of all that is pe iferous
the word Lazaretto, and, what is se
curse, in the terms leper or lazar an
poor-house, to which an *incurabl*
neither painful nor contagious,
rather than positively or *violentl*
mission.

In conjunction with my friend
some future opportunity to give
tients on whom he is at present
remedies,) I have selected the fol
taking them, I had not read thos
could not accuse my memory wit
tation, than regarded the " lizar
attention called to the subject,

dental perusal of Dr Kinnis's paper. It is not likely, therefore, that I was much biassed by previous theory, or that I have warped the facts and appearances, by one or the other set of opinions. The cases were taken some months ago. Since then, I have referred to the above works, and, subsequently, each patient has been re-examined, and the account of his case read over at the same time to Dr Moniz, who bears testimony to the original correctness, and the absence of all alteration or addition of consequence.

Francisco Gonsalves, æt. 17. This boy is from the parish of Nossa Senhora do Monte, about 2000 feet above the level of the sea; a well-cultivated, and by no means unhealthy part, and the inhabitants of which, from their vicinity to, and constant intercourse with the city, are generally as well fed and clothed as most of the peasants in the island. His relations are by no means of the poorest, and *none of them have ever been lazars.* He has been affected four years, but has only just entered the house, having worked in a wine-store as a day-labourer up to the present time. The hair of the head is healthy, that of the brows scanty; the eye-lashes perfect; there are shining clusters of tubercles, darker than the surrounding skin, on the brows, cheeks, and chin; the lobes of the ears are swollen and elongated, and on feeling them a tubercle is perceptible in each, within the substance of the lobe; the alæ nasæ are slightly ulcerated, and expanded laterally, and the lips thickened; he is rather hoarse. In the centre of the palate is a large oblong pale tubercle, and several smaller on the uvula and velum. Tubercles are dispersed from the shoulders to the wrists; around the elbows they are scabby and cracked; *the hands are healthy*; the chest, [illegible]domen, and back free; mammæ full,
and indurated. T[illegible] femoral tumour on each side, always
[illegible]lent. F[illegible]wards are thick patches of tubercles
[illegible]ozing, especially on the buttocks,
[illegible]ves. He has phymosis with a tu-
[illegible]repuce; the scrotum is quite free,
[illegible] *he edges of the shoes.* There is a
[illegible] the testicles are small and pendulous,
but [illegible]e says that he has never known a wo-
[illegible]n.

[illegible]t stated his age to be 15. He now
[illegible]f reckoning) that he has confessed ten
[illegible]onfession taking pla[illegible]ars,
[illegible] annually) would [illegible]
[illegible] the evolutio[illegible]
[illegible]uld [illegible]

his *general* aspect was that of a youth of 17. The guarda, or keeper of the house, an observant intelligent man, said significantly, that he had no doubt about this patient having sexual propensities. Upon being asked whether he had ever detected him with women, he answered, that he had no opportunity; and when pressed further, added, that it was notorious, and gave such reasons as left no doubt upon our minds.

Jozé di Mendoça, æt. 25. From a low damp situation in the parish of Porto da Cruz in the north. Family poor, but not beggars. An uncle and two brothers were lazars; he has been a lazar ten years; is very hoarse, and was so from an early period, and has had the small-pox since his present disease. The hair of the head is thin, light-coloured for a native, but sound; that of the brows and lids is gone; the velum palati is tubercular and ulcerated; the bridge of the nose has sunk, and the alæ have fallen and are compressed; there are several distinct colourless tubercles on the cheeks; the brows are thickened and beetling, but do not display distinct tubercles; several are felt within the lobes of the ears, like split peas in a bag; *the hands are sound;* the *mammæ* are *as large* as those of *a girl at the age* of *puberty,* and have the *same plump form;* but the *areolæ* are *more full* and projecting than those of a *woman* advanced in *pregnancy.* The back, chest, and belly, are not affected; from the elbows to the wrists are a few distinct tubercles; the skin is everywhere shrivelled, scurfy, and unhealthy; the elbows scaly and cracked. The scrotum is covered with a scabby eruption, and there is phymosis, with a large indolent femoral tumour on each side; the quantity of hair on the pubes is about the same as in a healthy boy at the age of puberty, and the developement of the parts is proportionate, the testicles being small and pendulous, but healthy. He says that he never has had any sexual intercourse, and that he never feels an inclination towards women. The legs are scaly rather than tubercular, and the *feet are free below* the *margins* of the *shoes.*

N. B. The guarda says, that he suspects this man of similar propensities with the last, but he does not, as in the last case, speak positively.

Antonio Peneira, æt. 34. From the Estreito of Camera de Lobos in the south, a parish averaging about 2500 feet in height above the sea, dry, healthy, and well cultivated—in fact, one of our best wine districts. His friends are not very poor, and none of them have been lazars. He has been diseased eighteen years. The hoarseness is not excessive; the eyebrows and lashes have perished; there are thick pendulous corrugated tubercles on the brows and overhanging the nose, the bridge of which is gone, the alæ collapsed, and the tip occupied by a large tubercle. The lips are much thickened and cracked; the cheeks have several distinct tubercles, and the left angle of the mouth is distorted, and drawn down by tubercular thickening. The left ear has a large rising tubercle, and the lobes of both have the internal tubercles (if I may so call them) before described. The velum and palate are tuberculated, and the *base only of the uvula* remains; the whole of the trunk is free, *and the hands also;* the mammæ are natural; elbows slightly affected; legs ulcerated; on each thigh is an indolent tumour; the genitals are moderately evolved, with a scanty crop of hair on the pubes. He says that he has no sexual propensities.

N. B. The superintendent said of this man, the moment that his name was mentioned, " he muito mariola," Anglicé, (in his acceptation of the words,) " he is a knowing one." He stated candidly that he could not bring positive proofs of his indulgence in sexual intercourse, but that he had not the shadow of a doubt as to his propensity.

Antonio Rebello, æt. 50. From St Roque, a well cultivated and healthy parish close to the city, the average of which may be about 1500 feet above the level of the sea. This man is in the sixth year of the disease; his relatives are all very poor, and his mother, brother, and son, were lazars, and all of them diseased before himself. He is hoarse; the ears and brows are thickened, but not distinctly tubercular; the nose has suffered but little; there are tubercles on the uvula and root of the tongue; some inconsiderable ones around the elbows, and the legs are scaly; on each thigh is an indolent tumour. The *palms of the hands, feet, and ankles, are inflamed, cracked,* and covered with an itchy herpetic eruption, and always oozing out ichor; the *expression* of the *countenance is natural;* the mammæ the same, and the genitals fully evolved.

N. B. The superintendent knows nothing about this man.

Manoël Fernandes, æt. 60. (N. B. This is, I suspect, the *last* patient described by Dr Adams, although the statements differ in some respects.)

He says that he has been in the house fifty years! His mother died a lazar, but *was sound when he was born;* (this assertion he persists in.) There are neither eyebrows nor lashes; the globe of the left eye is absorbed, and the right destroyed by staphyloma; his nose is small, crushed, and deformed; the upper lip drawn in and puckered, the lower lapping out in a most singular and disfiguring manner; there are no tubercles on his face; he is very hoarse; the skin is universally withered, wrinkled, and scurfy, and he has altogether *more the appearance* of one who has *suffered* severely from *scurvy* than from leprosy. The mammæ are natural; the joints of the fingers are all knotted and distorted, as in gout or chronic rheumatism; the toes are so shortened, contracted, and diseased, that they give him the appearance and hobble of a club-footed man. The legs are ulcerated; there is the indolent femoral tumour on each side, and the generative organs are evolved proportionally to the whole system. When asked if he had ever cohabited with a woman, his reply was, " Lord, Sir, who would allow me." He might have added, " who could suspect me," for he was, indeed, *below* suspicion.

Manoël Rodrigues, æt. 50. Has laboured under the disease fifteen years. None of his family were ever affected. His circumstances have always been good. He has generally inhabited the city, and been a servant in respectable families. The plate of " Gonsalves," in Dr Adams's work, would convey a very tolerable caricatured representation of this man. The brows are covered with tubercles; the nose is not much affected; the cheeks are tuberculated; the upper-lip stretched and tightened by the thickening of the disease, and partly absorbed, so that no red margin appears; the lower-lip is greatly enlarged and everted; the chin is covered with tubercles; and the ears, which are prodigiously elongated, hang down, along with heavy tuberculated masses of integument from the under jaw and throat, so as to resemble together the wattles of a turkey. He is very hoarse; the mouth is lined with tubercles, and the surface of the tongue stands erect with them, (I know no expression so appropriate, and must, therefore, be allowed it.) The *hands* are very much swollen, with *large chapped tubercles* on their backs and fingers; *the mammæ* are as *pendulous* as those of *an old woman*, and the *areolæ* look as if they were cancerous in the first stage of ulceration; the abdomen is covered with confluent flat tubercles, giving it the wrinkled peculiarity of that of a woman who has borne many children. On each side there is an indolent femoral tumour as *large as a moderate fist*; the scrotum is sound; the genital organs healthly and fully evolved; the legs and thighs are tuberculated.

He has had *three* children by his wife, (a sound woman,) *since* he became a lazar; the youngest is ten years of age, and they are all healthy. He says, that it is ten years since he cohabited with his wife, and she, (ugly enough, in all conscience, to justify the legitimacy of the children,) corroborates his statement. He further says, that he has experienced a gradually lessening inclination towards sexual intercourse, from the commencement of the disease, and that it has long since ceased altogether.

N. B.—The guarda says that this man's account may be relied upon.

Maria de Silva, æt. 20. Has been diseased seven years, and her aunt was a lazar. There are thick clusters of tubercles on the brows, and the nose has fallen; the lips are swollen and tubercular, and the ears and hands the same; the breasts are natural, and she menstruates, although irregularly; she is unmarried, and says (of course) that she has never cohabited.

Maria d'Incarnação, æt. 35. *Her father, mother, three sisters*, and *two brothers* were lazars, at the same time, and are all dead!

This is a well-marked case. The breasts are fully evolved, and she menstruates irregularly.

Antonio de Silva, twelve years a lazar, says that, during the last two years, he has had neither inclination, erection, nor emission; but that previously he experienced all more or less; he is married, and the guarda states to be depended upon.

Francisco Feneira, four years a lazar. His wife is now in the eighth month of pregnancy; he has always cohabited with her, and, as he is very far from a disgusting object, although the disease is confirmed, and well-marked, and she is a woman of good character, there is no stronger reason to suspect her of infidelity than any other sun-burnt daughter of Eve.

A lazar woman in the house was impregnated by her sound husband; the child was born healthy, and has since died from some other disease.

Formerly, (it was stated to me as being notorious) sexual intercourse used to take place between the men and the women in the establishment, although no individual instances can now be adduced. At present it is so regulated that nothing of the kind can occur.

The *general characteristics* of *leprosy* which Dr Kinnis has given, are so thoroughly applicable to that disease as now existing here,—so admirably descriptive, and so much superior to any which I could give, that I shall decline the attempt, referring those, who may not have already seen it, to his communication.

It will also, I think, appear from the general tenor of the foregoing cases, that his description and conclusions more accurately apply to it, than do those of Dr Adams, with the following exceptions. In the *Isle of France*, one patient was *without* the *femoral tumour*, and in some it occurred on *one side* only; *here* I have invariably found it on *both sides*. *There* it was prone to periodical attacks of *acute inflammation*; *here* always *indolent*. Dr. K. met with *cicatrices* on its surface; I have never observed them.

The *wasting of the genital organs*, described by Dr Adams, had not taken place in a single individual in the Isle of France; neither has it occurred, *further than to correspond with the great emaciation of the whole system*, in those who have fallen under my notice here. It is true, that in every case, (excepting perhaps Rodrigues,) were the individual under examination hidden from view, the organs of generation alone exposed, and the examiner called to pronounce upon them, as if attached and belonging to the swarthy, robust, vigorous, and hairy (for they are remarkably hairy) peasantry, which he is in the daily habit of encountering, the inspector would, without hesitation, condemn them as inadequate and immatured; but place before him, exposed in all his misery and nakedness, the loathsomely diseased, enfeebled, prematurely aged, and deserted outcast, of whose wretched frame they are component parts, and who, so far from exhibiting the ruins of a once well-compacted structure, tells, to the practised eye, that he has not (to use a vulgar but expressive phrase) been either well-got, or well-nurtured, and he will then agree with me, that they are proportionate and commensurate with the miserable whole, for they are, with but few exceptions, of originally small skeletons, lax fibre, contracted chests, bulky abdomens, in-kneed, and scantily haired.

I agree with Dr Kinnis also, that neither the wonderful salacity, attributed by some writers, without a doubt erroneously, nor the utter extinction of the venereal appetite, which others have alleged, existed in any case. They were all, in these respects, much in the condition of men who had been labouring for years under a disgusting, debilitating, and disfiguring disease, which they know to be incurable,—confined to a small close prison,—badly fed, (sine Cerere et Baccho friget Venus,)—objects of loathing and abhorrence to the other sex,—and without pecuniary means to overcome these obstacles, or opportunities to render them available if they even possessed them. It will perhaps, then, be asked, why they so generally denied all sexual feelings? Principally, I should reply, because, when such feelings existed, they were in the habit of *gratifying them* in a *surreptitious* and *disgraceful* manner, and in no small degree, from the fear, so common in all the lower class, that you may thence attribute their disorder to a syphilitic taint, and consider them unworthy objects of charity and commiseration, or add to their other evils a mercurial infliction.

Neither Dr Adams nor Dr Kinnis has noticed the unnatural developement of the male breasts, which occurred in two of the present cases, nor the great size of the femoral tumours observed in one; but I do not know that any useful inferences can hence be drawn. An accumulation of facts is, however, always desirable.

Dr Adams concludes, that, "when the disease is derived from the parent, it commences at an early age, and that, in those in whom it has shown itself at a later period, (very relative terms,) it has originated with themselves;" but the boy Gonsalves was attacked at 13, perhaps at 11, and Peneira at 16, and *none of their relations* had been *lazars;* and, on the contrary, Rebello became a lazar at 44; and his mother, brother, and son had been so before him!

He concludes also, that, "when the predisposition is derived from a leprous parent, the action of the disease takes place so early in the offspring as to preclude the possibility of his perpetuating the race." But Rebello's mother was a lazar; he became one at the age of 44; and his son is now a lazar.

As to the *hereditary nature* of this, as well as many other diseases, it is much too abstruse and recondite a subject for my compass. If any disease is hereditary, I suppose that this is; but, then, I admit that, like the descendant of Caractacus, I shall not be content to trace its pedigree *only* up to the Ark. All *hereditary* diseases must have originated with *Adam himself;* and what a walking pestilence does this make of our unfortunate primogenitor! Could any one disease have been produced *de novo*, at *any subsequent* period, the legitimacy of the whole family is quashed.

Regarding a *constitutional predisposition*, which Dr Adams advocates, I take it, that this is necessary to all diseases not strictly local; otherwise, why does the *same* cause produce different effects (diseases) in different individuals; but I think he fails when he attempts to substantiate that, because it is *constitutional*, it must therefore be *parental*, or derived from one or both parents. I suspect that "'twas given to man with his earliest breath," not imbibed by him in his mother's womb. How *seldom* do the *illegitimate* children of gouty profligates, the *nephews* of cardinals and bishops for instance, who lead a bustling life of it, inherit this universally admitted heir-loom, in comparison with the pampered offspring of diseased *legitimacy*. We have here an instance of three children of a lazar, the youngest of which is ten years of age, not having yet at least shown any *hereditary taint*, or *parental* constitutional predisposition. At all events, instances not unfrequently occur of some children escaping an hereditary taint, as well as a constitutional predisposition traceable to the parent, while others of the same family fall victims to it. How is this to be accounted for? In my estimation, like original sin, it is amenable to no exemptions,—it is the lot of all, or of none.

The *exciting causes* appear to be confined to such as poverty and its attendant evils engender. There is at present one person labouring under the disease, who is a clerk in a wine-store. He is quite the aristocrat of leprosy here, and I have never heard of its occurrence in a more exalted situation; it seldom rises above the *lowest* class of peasantry. With a predisposition to the disease, however acquired, poverty, insufficient shelter and clothing, spare unwholesome diet, great and sudden alternations of temperature, and filth, in their various combinations, appear to be necessary for its production. Separately, not one of them would produce it, nor the whole combined, unless co-operating with a predisposition, for they are combined in eight-tenths of the peasantry, and yet the lazaretto contains *eighteen* persons only out of a population of a *hundred thousand!* It is, therefore, after all, when compared with the more ordinary every-day diseases which are thinning our ranks, a mere bugbear. Locality has, I think, little or no influence.

Dr Adams has, very injudiciously I think, clogged the inquiry into the nature of the disease with Scripture authority.* Matters of science can never be benefited by modes of faith; and he appears to have placed himself between two horns of a dilemma, on one of which he must inevitably be impaled. If the leprosy of the Sacred Writings was the Syrian or Arabian, it was also *highly infectious*, which the Syrian or Arabian *is not*. If it was any other species of leprosy, *no miracles were needed for its cure.*

Its *contagious* and *curable* qualities, matters of the greatest practical consequence, have long since ceased to find champions. Dr Gourlay, fifteen years ago, endeavoured to support the one, and establish the other; but I need not say that the failure was complete. He says, that, thirty years antecedent to the period at which he wrote, and, at least, five-and-forty from the present day, "it raged at Ponta do Sol with all the violence of an infectious malady, passing from one family to another, and threatening to extend its ravages into the neighbouring country, till the governor took the prudent and wise step of separating the healthy from the diseased, and preventing their interference with each other;" but the Doctor has not given us his authority for this story, and, at all events, a tolerably long period has elapsed without a recurrence. Some months back we had a mild scarlatina in the island. The country people designated it *Huma peste.* Who knows, but it may vivify into "*The plague*" some thirty years hence. He mentions, "the porter of the lazaretto, and two or three cases (indefinite numerals these) of man and wife out of it, where, to all appearance, a communication of the infection took place." The Doctor really should have recollected that he was writing for posterity, and should have given *facts and minute particulars*, in lieu of bare assertions. He says, *that*, in the British West Indies, "the unhappy victim is *deserted by even his nearest friends* (for the sake of humanity I hope that he is mistaken,) and ranks this along with the "*judicious precautions*." The general dread and strong sense of its infectious nature, prevalent in the West Indies, he adduces as irrefragable proofs. On the same philosophical ground, it is strictly orthodox to believe in ghosts and drown witches.

In the *treatment*, Dr Gourlay says, that, in a few instances, he had suspended the progress of the disease by mercury. I wish that he had obliged us with the particulars; but the "Lacerta agilis, or common lizard," was the Hohenlohë of his adoration. It is not, however, he adds, "to be concealed that it *at times failed*." Now, I mean to assert that it never did otherwise, and I bring *his own three cases in proof*, none of which, *according to his own showing*, was an instance of *leprosy*. I appeal, in corroboration of my assertion, to all who have compared his descriptions of these cases, with well-authenticated examples of the disease, or who have ever seen the disease itself. I appeal also to *Dr Gourlay's subsequent experience*, and to the *united testimony of all the medical men* at present on the island, repeating, that there *never has occurred in Madeira an instance of authenticated contagion, or of well-attested cure.*

Dr Gourlay mentions, that Dr Heberden knew one example of its removal, and that Dr Clarke of Dominica has succeeded with the arseniate of mercury *in a number* of instances. I should feel personally obliged, the profession at large would be interested, and a most unfortunate portion of the community *might* be benefited, if some one would publish or republish these cases.

The following fact, which I met with the other day in a book entitled, "Impressions and Scenes in Egypt and in Italy," may not have been generally seen by the profession, and is, I think, valuable, inasmuch as the writer (evidently not one of us) appears never to have dreamt of supporting any theory, but to have acceded quietly to the popular opinion, attributing their exemption to "*God's blessing*," and not considering that the withering plague-blast is as much the act of a beneficent providence, as the reviving mistral.

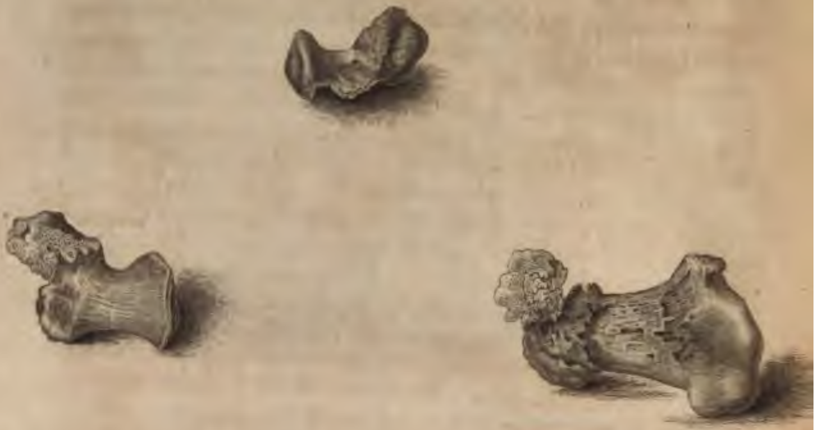
"We had been favoured with four days fine run (from Alexandria) when Thomas the servant was reported sick. On the following morning the captain announced to us that the cabin-boy complained of a tumour in his groin. The ship was put about, and we beat back. These two had been more particularly employed about us in the cabin; they had touched every thing in it; our clothes, shoes, our persons; and it was impossible not to contemplate the spreading of this calamity as a natural consequence, &c. We had a party, calm, tranquil, and as little outwardly disturbed, perhaps, as men could be under such circumstances; no idle apprehensions; no vain complainings; but in the silent night, sometimes an anxious feeling of those glands where the plague first seizes its victims, a fancy that they were swelling with the subtile poison. In three days we anchored in the harbour of Alexandria; a boat came for the man (his case was pronounced a very bad one; he never had any tumour or swelling of the glands; it was what they term the internal plague, slow in destroying, but always fatal;) and as the boy still preserved an appearance of health, we were in hopes that he was not infected; but when the doctor came on board and examined him, he decided that it also was a clear case of plague. The man was lifted and let down into the boat by the crew, &c.; he died the next day, &c. Here we lay for eighteen days performing a quarantine of observation, and then again put to sea, having gone through all the course of fumigation and cleaning required. Every susceptible article was dipped in water for twenty-four hours, and every thing laid out in the sun and open air. By God's blessing not one person in the ship caught the melancholy disease, a circumstance, perhaps, as remarkable as is on record."

The case is its own commentary, and, as I have never seen the disease in question, I decline hazarding any remarks.

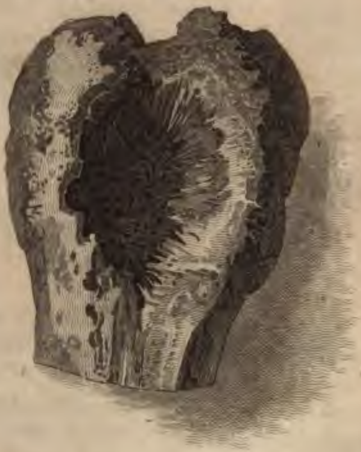
Funchal, Madeira, 10*th October* 1825.

Edin.r Med & Surgical Jour. No 86.

Mr LISTON'S CASES p.27.



Mr SYME'S CASE p.49



W.H.Lizars sc.

ART. III.—*On the Cure of Exostosis of the Last Phalanges of the Toes by Excision of the diseased Bone.* By ROBERT LISTON, Fellow of the Royal College of Surgeons, and Lecturer on Surgery. Communicated to Dr DUNCAN Junior. *(With a plate.)*

I HAVE, for some time past, contemplated writing you regarding a disease of which I have met with a good many instances, and which, so far as I know, has not been adverted to in any surgical work. A variety of circumstances and reasons have, till now, prevented me from following out my intention.

The disease I allude to is *Exostosis* of the *last phalanges* of the *toes*. In your extensive researches you may have met with a description of this species of tumour so situated, and, should that be the case, I hope you will inform me of it. *

This tumour, though of comparatively a trifling size, from its situation is productive of great pain to the patient, and frequently of considerable lameness. The great toe is that most commonly affected, but I have also met with cases in which the smaller toes were the seat of the disease. The tumour appears by the side of the nail, and is covered by thin shining integument; extreme hardness and immobility mark readily its character. The newly formed part is of the consistence of the bone from which it originates, and without any intermixture of cartilaginous or softer substance. Some of these tumours adhere by a narrow neck, others have a broad attachment. They are of course met with of different sizes. I send you sketches of three out of five specimens in my collection; but I have seen many more cases besides those from which the preparations were obtained. In the first case, the tumour was cut off, but very soon appeared again with all its former concomitants of pain and tenderness, increased by pressure or motion. Amputation was then performed in the middle of the second phalanx. Since then, I have been in the habit of recommending, and, when it has been agreed to, performing the amputation at the joint, betwixt the first and second phalanx;—an operation quite effectual, and more neatly, quickly, and easily done than the division of the bone. No lameness ensues. The disease is of so exceedingly troublesome a nature that patients will in general readily submit to any thing. The amputation of the whole bone appears to me preferable to any attempt at excising the diseased part only, as being less painful, more certain, and productive of as little inconvenience.

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* The Editor is not acquainted with any preceding description of this affection.

I expected, long ere this, to send you a continuation of my paper on Diseases of the Bones, together with further remarks on the Flap amputation. These essays are now remodelled, and I intend publishing them, with papers on various other surgical diseases and operations, in a separate work. I find that Mr Samuel Cooper, in his Surgical Dictionary, undoubtedly the best text-book we possess, has supposed that I disused the tourniquet from its being inconvenient in the flap-operation which I practise. This is by no means the only, or the strongest, reason. The circumstance of much less blood being lost, when compression of the principal vessel is made without the use of a circular band, is, of itself, a sufficient recommendation of the practice. But the explanation of this, to many seeming paradox, is given in a former number of the Journal, and will, in the Surgical Observations to which I have above alluded, be adverted to much more fully and carefully.

Edinburgh, 29*th March* 1826.

ART. IV.—*Case of a New Born Child, in which the Brain and the greater Part of the Cranium were wanting.* By JAMES GUTHRIE, Surgeon, Kilmarnock.

THE mother of this child, who is of a delicate habit, complained of great distension of the abdomen during the latter months of pregnancy. "She often felt," to use her own words, as if she would burst." The motion of the child was unusually strong and vigorous. I was called to attend her on the morning of the 3d December 1825. The *liq. amnii* had been unexpectedly discharged previous to my arrival, in an enormous quantity. It was said to amount to several pints; and, from what I observed, this calculation may be considered correct. On examination, the *os uteri* was found dilated to the size of half-a-crown. Uterine action not having fairly commenced, I for the present left her.

At 11 o'clock I was again requested to attend her. Examination now discovered an elastic tumour of an irregular shape in the vagina. On pushing the finger past it, I felt the occipital bone, and one ear, which convinced me that the head of the child presented. After two hours of severe labour, this extraordinary head was expelled. At this stage uterine action almost totally ceased, the body remaining for upwards of an hour in the vagina. The motion of the child was remarkably violent during this period. In order to hasten delivery, I attempted to bring down one of the arms by pulling at the wrist.

This, however, I could not accomplish, though I used considerable force. During these attempts she complained much of pain. I next introduced two fingers along the neck of the child in search of the arm-pit. This I soon reached, and having fixed one of the fingers in it, I began extraction, which required considerable force. Uterine action was at last excited, and the delivery was soon accomplished. The placenta was easily extracted.

The child lived only an hour and a half. It appeared destitute of the power of voluntary motion. Respiration was performed by a convulsive effort. This was particularly observed during inspiration.

Dissection.—The tumour on the head presented externally the mulberry colour, and was of an hemispherical form. It felt soft and elastic to the touch. On the summit a number of large vesicles were observed, which, on being punctured, discharged a considerable quantity of serous fluid. The cavities from which this fluid issued did not communicate with the cranium. Internally this tumour presented the appearance of sarcoma, but was much more elastic. It was very vascular, and contained a considerable quantity of dark-coloured blood.

On examining the cranium, it was found, that the scalp, the *os frontis*, the parietal, and a great part of the occipital bones, were wanting. Indeed the cranium appeared as if sawn directly across from the superciliary ridge to the protuberance of the occipital bone. The remainder of the cranium was covered by the scalp, and lined internally by the dura mater. This last membrane did not extend farther than the bone, at least no appearance of it could be observed in the tumour. This remarkable tumour adhered firmly to the scalp and the dura mater. On its removal, a large quantity of serous fluid escaped in a full stream, apparently from the base of the cranium. The *sella turcica* was unusually prominent. I observed part of the *tentorium* entire; but no vestige of cerebrum or cerebellum could be detected after the most minute inspection. Circumstances prevented me from examining the spinal marrow. The cranium was much thickened; and, from the deficiency of bone, the eyes appeared to project much more than usual.

In conclusion, I am disposed to consider the above case as one of malformation, connected with a dropsical state of the ovum.

Kilmarnock, 3d *December* 1825.

Art. V.—*Case of Diffuse Inflammation of the Cellular Membrane, arising from puncture in Dissection, terminating favourably.* By George Forbes, F.R.C.S.L.

On the morning of the 7th of April last, while prosecuting my anatomical studies under Dr Aitkin at Edinburgh, in making a vascular preparation of the inferior extremity of a female who had died of peritonæal inflammation, I punctured the indicator finger of the right hand so slightly, that it passed unobserved until pain in the axilla and rigors excited alarm, and made me examine my hands, when I perceived a slight scratch in the place above alluded to.

I went to my lodgings, and as the rigors were increasing, I immediately sent for Dr Aitkin, who endeavoured (seeing me much alarmed) to persuade me that those symptoms proceeded from cold I had received from being out so early in the morning, and that I could surely never suppose them to arise from a subject which had been previously injected with a solution of nitre, and afterwards kept in spirits for some days.

He ordered me an anodyne diaphoretic draught, which operated well, and when I awoke, I found the rigors gone, but complained of severe headach, great thirst, skin hot, face flushed, with a quick and full pulse.

8th. All the preceding symptoms considerably increased, Dr A. ordered me to be bled from the arm, to the extent of ℥xxx; I had a saline purgative; and a solution of supertartrite of potass, and a little tartrite of antimony, was allowed as common drink. Towards the evening I complained of considerable pain in the right axilla, but no swelling could be perceived; blood a good deal buffed. *9th.* Purgative had operated well; pain of the axilla very severe, with slight swelling; fever still increasing. Continued the saline solution, and had twelve leeches applied to the arm-pit, which gave considerable relief. *10th.* Fever and pain of the axilla augmented; swelling increased but not discoloured; had the leeches reapplied, and warm poultices thereafter. *11th.* Aggravation of all the preceding symptoms. Was visited by Dr A. accompanied by Dr Duncan junior, who approved of the plan of treatment, and ordered the leeches to be again applied, and followed by the warm poultices. Common drink to be changed to effervescing draughts of Acid Tart. et Carb. Sodæ. Wound of the finger had festered a little, but was now almost healed, and no line of communication could be perceived between it and the seat of pain in the axilla.

12th. Pain and swelling of the axilla increasing; leeches again applied, and the warm poultices to be renewed every two or three hours; was ordered an opiate at bed-time, as I had passed a very restless night. 13*th* and 14*th*. Pain and swelling of the axilla very much augmented; great thirst; skin hot and dry; pulse very quick, and tolerably strong; slight delirium during the night; bowels constipated. Leeches and warm poultices were applied as formerly, and a solution of sulphate of magnesia, and a little tartrite of antimony, was ordered to be drunk in small quantities until the bowels and skin should be acted upon; the effervescing draughts to be continued, and the opiate at bed-time. 15*th*. Passed a restless night, with considerable delirium; pain in the axilla excruciating; swelling increased and diffused under the pectoralis major and latissimus dorsi muscles. Dr D. thought that he could perceive a sense of fluctuation in the axilla, and ordered an opening to be made on the inner edge of the latissimus dorsi, which gave vent to about twelve ounces of well-formed pus, and great relief was instantly obtained. Pledgets of old linen were applied to the wound, and kept on by a roller; took an opiate at bed-time. 16*th*. Passed a better night, with less delirium; wound discharged about eight ounces of pus; was allowed a little animal food, and a few glasses of wine, during the day. The wound was dressed again at night, and discharged nearly the same quantity as in the morning. Took the opiate as formerly. 17*th*. Passed a tolerably good night; febrile symptoms considerably abated; wound discharged about the same quantity as yesterday. Wine and opiate as usual.

Towards the evening of the 17*th*, slight pain was felt about the top of the right shoulder, and lateral part of the neck. 18*th*, 19*th*. Slept tolerably well; discharge from the wound rather less; pain of the shoulder and neck much increased, with slight swelling, and considerable rigidity of the muscles. Had twelve leeches applied, and warm poultices every second or third hour; wine and opiate continued. 22*d*. Febrile symptoms much increased; discharge from the wound gradually diminishing; pain, swelling, and rigidity of the muscles of the neck and shoulder much greater; bowels constipated. Was ordered ℥i Magnes. Sulph.; wine to be discontinued; leeches, warm poultices, and opiate, as formerly. 24*th*. Discharge from the axilla rather less; pain and swelling of the shoulder and neck much increased. An opening was made near the scapular end of the clavicle, and above four ounces of purulent matter discharged with great relief. Warm poultices to be applied every two or three hours; whey ordered as common drink; wine again allowed; opiate as formerly. 26*th*. Discharge from the axilla still getting less, that from the shoulder increasing; general health and strength improving. Poultices, wine, and opiate as formerly. I was now able to sit up a little, although very weak and much reduced. *30th*. Discharge from both wounds diminished; general health improving; animal food and wine increased; opiate at night as formerly.

May *2d*. Discharge from the axilla rather less; that from the shoulder entirely stopt; had passed a very restless night, with considerable delirium; great thirst and headach; skin hot and dry; febrile symptoms much increased; pain and rigidity of the neck very great; and the only relief that was obtained was by leaning the head almost on the shoulder of the affected side. A saline purgative was ordered; wine and animal diet to be discontinued; leeches, warm poultices, and opiate as formerly. *5th*. All the preceding symptoms very much aggravated; fluctuation perceptible near the middle of the clavicle, where an opening was made, and a considerable quantity of matter discharged, which gave great relief; discharge from the axilla much the same as formerly; poultices and opiate still continued. *7th*. Both wounds continue to discharge; pain, swelling, and rigidity of the muscles of the neck extending towards the mesial line on the dorsal aspect; some pain and redness near the middle of the sternum. Considerable pain was also felt upon taking a full inspiration, accompanied by slight cough and expectoration. Leeches were again applied to the neck and sternum; warm poultices and opiate as formerly. *10th*. Pain, swelling, and rigidity of the neck rather less; discharge from the wounds diminished; pain in the chest, cough, and expectoration rather greater. A red circumscribed tumour was observed near the middle of the sternum, to which warm poultices were applied, in conjunction with the shoulder and neck. A small quantity of wine and animal food again allowed, along with the opiate at bed-time. *12th*. Discharge from the wounds greatly diminished, and appears to be only serum; pain and rigidity of the shoulder and neck much less. An opening was made into the tumour on the sternum, and a small quantity of purulent matter discharged; poultices to the shoulder and neck continued; wine and opiate as formerly. A wine glassful of Infus. Calumbæ to be taken three or four times daily. *15th*. General health and strength very much improved; discharge from the wounds still getting less; rigidity and pain of the neck and shoulder rather easier; cough and pain in the chest almost gone. Poultices, wine, and tonic infusion continued; opiate laid aside. Upon a consultation of my medical attendants, it was thought that I might be safely removed to the country, more particularly as I was anxious to get home. *17th*. Continuing to improve very fast, I went by sea to Morayshire, where

I arrived upon the 20th, very much improved by the voyage; the wounds of the shoulder and axilla had healed, and that near the sternum discharged but very little. The hardness of the muscles of the shoulder and neck continued for a considerable length of time, during which period the poultices were kept applied; and it was not before several months had elapsed that the motions of the arm were restored, and even at this period it is very weak, and unable to undergo much fatigue, and, when suddenly moved, a crepitus is heard, as if some of the bones were fractured.

London, 18*th January* 1826.

ART. VI.—*Cases of Hæmorrhœa Petechialis, in Individuals related to one another.* By ALEXANDER MURRAY, Surgeon, Alford.

I HAVE been induced, by perusing the articles on a Tendency to Hemorrhage, in the last number of the Edinburgh Medical Journal, to offer for publication a short notice of cases of that disease, which occurred in the neighbourhood. The symptoms do not differ from those usually observed; but the circumstance of five individuals, related to each other, having been attacked with this complaint—which is so rare in this district that I do not remember to have seen here more than one other instance—is a fact, which, though not altogether new, appears to me interesting enough to be recorded. It is particularly worthy of notice, that all the attacks took place in boys; and I was informed, that none of their relatives, as far as it was known, had been at any time affected in a similar manner.

The reports—of which I annex a copy—were written, as their date implies, in June 1824, but were laid aside, and not thought of, until I saw Mr Davis's case, and the extracts from Hufeland's Journal, regarding hereditary tendency to hemorrhage.

13*th June* 1824.—William Coutts, at Cobbleseat, in the parish of Keig, 13 years of age, has, for a fortnight past, had a slight degree of bleeding from the nose and mouth, but no very great quantity of blood has been lost, and no injurious impression thereby apparently made. Three days since, he is reported to have felt cold, and shivered, and since that time he has kept his bed. No bleeding at present. Complains of sickness and thirst; face flushed; drowsy; some delirium; pulse 118. Took Epsom salts to-day, which operated; has various stigmata and vibices on his skin.

This boy was attacked by hemorrhage from the front gums when one year old; and from that time he has been liable to bleeding, occasionally from the gums, and at other times from the nose. In summer, his worst attacks occur; and his mother says, the blue spots and dots always appear before he bleeds, and when these begin to fade, she knows the attack is over. He has always bled profusely when wounded, and a small injury leaves a livid mark. At present there is round one eye a degree of ecchymosis, occasioned by an accident so trifling that no pain was felt. Six years since a hemorrhage from the nostrils stopped, and immediately after the blood issued from the crown of the head, where no injury had been received; and the small opening by which the blood came is said to have been seen in a distinct manner. About two years since, I saw him for the first time, on account of a bleeding among his teeth from different parts; and at that time the hemorrhage was, in more than one place, permanently stopped by means of lint and strong pressure. The attacks of late have been less frequent and severe than formerly.

He has just now been bled from the arm, and though two veins were opened, not more than six ounces of blood were obtained. After bleeding, pulse a few beats slower; face less flushed, and he seems rather easier. Directed to have five grains of calomel in the evening, and to-morrow morning an ounce of Epsom salts; cold water to be frequently applied to the shaven head.

15th. Is better; headach gone; pulse 60, not quite regular; no thirst. This morning some hunger; strength improved; no difficulty was found in stopping the wound in either vein, but from one a small quantity of blood came in the night-time; vibices become fainter; nose bled a little this morning. The blood drawn on 13th has separated little serum; coagulum rather loose, covered by a pale-red film or crust, which becomes darker progressively from top to bottom, the lowest part being very dark-coloured. A dose of castor oil to be taken.

17th. Is now going about; no particular complaint unless of weakness; gums to-day observed to be pale, and they are said to be sometimes white and sometimes swelled. Cold bath and a weak solution of Epsom salts directed.

The chief part of the preceding history was procured from the patient's mother, an intelligent woman, from whom also the following particulars were got regarding other three of her children, who died from a similar disease.

The first was a boy, who, more than thirty years ago, was, when twenty weeks old, seized with hemorrhage from the nostrils, which lasted twenty-four hours, and recurred mostly every month, until he was three years of age, when he died from this cause. Before the bleeding began, he had small and large blue marks, (the latter usually appearing first,) and this was the case in all the four who were thus attacked; blood also, in all, came through the bowels occasionally, of a dark colour. This child bled greatly, even from a pin scratch. He had great thirst, and appeared bloodless before death.

The second died at the age of fifteen months in 1802. He was supposed to have got a wound from falling with a bit of wood in his mouth. At least, from this part blood issued, until the morning after the supposed accident, when he died.

The third boy had, from the time he was a twelvemonth old, occasional bleeding from the mouth and nose, and even from the eyes or eye-lids. Previous to death, which happened in his tenth year, he bled during a month from the mouth and nose. The parents of these four boys have other two sons and four daughters, none of whom ever showed any symptoms of this complaint, and they are, in general respects, healthy.

It is necessary to preface the following few particulars of another attack of this disease, in a boy named Cobban, by mentioning, that this boy is of the same name with, and distantly related to, the mother of the family whose cases have been related.

5th June 1824.—Cobban, æt. 6½. Has bled almost constantly for a week, from an aperture near the frœnum of the upper lip; blood pale and thin. Lunar caustic has been tried both now and on the 3d, (when I first saw him,) without much benefit. Lint, firmly pressed on the part, put a temporary stop to the hemorrhage on the 3d, but, to-day, he will not allow pressure. Has had much thirst, but it is now lessened; pulse 150; occasional retching. Before the above hemorrhage began, his nose bled for several days. To this he has for four years been liable, and when he received the slightest cut, it would bleed for a day or two. When he got a slight blow, an extensive ecchymosis supervened. Died on 7th.

Alford, 24th April 1826.

Art. VII.—*Observations on the powerful effects of a Mixture containing Nitrous Acid and Opium in curing Dysentery, Cholera, and Diarrhœa.* By Thomas Hope, Esq. Surgeon, Chatham.

Having witnessed, during the course of many years, in a multitude of cases, the great and beneficial effects of nitrous acid and opium in dysentery, cholera and diarrhœa, I conceive it to be my duty, through the medium of your useful Journal, to submit the remedy to the consideration and trial of my brethren in the profession. Although there are many circumstances connected with the remedy, which I have not been able fully to investigate and ascertain, such as the precise principle of its *modus operandi*, the full extent of cases in which its useful effects may be reasonably expected, and the limitations which some peculiar circumstances may be found to require, yet the numerous opportunities I have had of seeing its good effects in a great number of cases, and under a variety of circumstances, justify me, I conceive, in communicating, without further delay, my experience on the subject. I am aware that they who try a new remedy, seldom if ever find it so successful as he who first proposed it, because, in general, interest or vanity leads the discoverer to recommend it in such extravagant terms, as is found far to exceed the truth, inducing sober men to decline even to give it a trial, disappointed as they have so often been in the use of remedies proposed in an hyperbolical manner. Sensible of this, I shall not venture to recommend it in any enthusiastic or improper way, nor shall I take up much of your time in speculating on its mode of action, nor on the imaginary advantages it may produce in cases of disease, in which, by analogy, it might be used,—but shall simply state to you how I was first led to adopt it, and detail my own experience of its success, furnishing thereby, I hope, sufficient evidence to prevail on many of my brethren to try it, in order, if its inutility be ascertained, that, like many others, it may be justly sent to oblivion; or, if it be found as successful in the hands of others, or nearly so, as it has been in mine, that its merits may be precisely weighed, and its adoption rendered as general as humanity on the one hand, and its degree of usefulness on the other, may demand.

More than twenty-six years ago, when attending a case of dysentery, in which the usual remedies had been prescribed in vain, the patient determined, on his own accord, to take a medicine I had sent for his nurse, who was worn out with attention to her charge, and complained of excessive thirst. It occurred to me to give an acid to alleviate her complaint; and, in order to obviate any unpleasant effects, to join opium with it. I accordingly sent the following: ℞ *Acid. Nitrosi* ʒ*ij*. *Ext. Opii gr. ij*. *Aquæ* ℥*ij*. ***M***. *Cap. cochl. minus ter quarterve indies*; and the patient with dysentery having taken some of this medicine, the effect produced was so great, that it no less surprised him who, by a continuance of it, recovered, than it did myself. I prescribed it with equal success in a second case. In a third, I gave the acid without the opium, but it did not succeed till they were combined together, when a cure was effected. In March 1800, I communicated, in a letter to John Pearson, Esq. of Golden

Square, the discovery of this useful remedy, and my observations were printed in the third volume of the London Medical Journal, and afterwards in the second volume of the Edinburgh Practice of Physic, published in the year 1803.

Since that period, I have continued the use of the remedy with unvaried success, in all cases in my private practice. In 1815, a medical officer of rank spent the evening with me, and knowing my opinion and practice with respect to the acid medicine, told me that he had five men in hospital invalided for chronic dysentery, whose cure was hopeless; that they had taken the sacrament, and were quietly waiting their fate; and that he believed the acid mixture, in which I had so much confidence, would, in their cases, be unavailing. I asked and obtained his permission to try the medicine, and, hopeless as the cases appeared, three of them were cured. About midsummer 1819, twenty-six men were invalided for dysentery from the West Indies, and divided into wards, eleven in one, and fifteen in the other; and it was agreed that those in one ward should be treated in the usual manner, and those in the other with nitrous acid. The ward with the fifteen patients fell to the acid mixture, and twelve were recovered and three died, and of the eleven treated in the ordinary manner, three recovered and eight died.

In 1821, many cases of cholera and diarrhœa occurred on board the Ganymede, of which I was surgeon, all of which were treated successfully with the acid mixture. In 1824, in the month of September, seventy-one cases of disorder of the bowels occurred, many of which were remarkably severe. Not one of the patients died; not one of them had occasion to take more than five doses; the greater number only two; and one only had occasion for medical attention beyond the second day, as may be seen by the books of H. M. S. Dolphin, of which I was then surgeon. On board the same ship, in July 1825, no less than 264 cases of colic, dysentery, and cholera, and diarrhœa, occurred, owing, in a great degree, to the unusual and intense heat of the weather, which was severely felt throughout the kingdom. Of these, not one died; and 85 were so soon relieved, that they were scarcely absent from duty, the acid having so speedily produced its usual good effect.

In order, however, to convey a more distinct view of the nature of those cases, and the mode of treatment, I shall present you with an abstract of 179 cases, being the majority of the 264 cases just mentioned, taken from the hospital-book of the Dolphin, occurring between the 17th and 26th of July 1825, divided into four classes. In the first are comprehended cases of cholic and diarrhœa; in the second and third, cases of cholera; and in the fourth, those of dysentery.

General Abstract of Patients, from July 17th to the 26th inclusive.

Classes.	Doses taken.	Time under treatment.	Observations.
I.—48 Sick.		2 lost no time	Several had from five to eight stools before they had an opportunity of applying for relief. One case relapsed, cured after taking the second dose.—*Cholic and Diarrhœa.*
14	1	33 one day	
33	2	10 two days	
1	3	2 three days	
		1 four days	
II.—67 Sick.		3 lost no time	Many had from eight to twelve stools before they were able to apply, being taken ill at their labour on shore. One relapsed, but cured by a second dose.—*Cholera.*
2	1	25 one day	
43	2	28 two days	
18	3	5 three days	
4	4	3 four days	
		2 five days	
III.—60 Sick.		2 one night	All cases of marked severity, unable to stand, cold sweats bedewing their pale features, with spasmodic affection of limbs and bowels; the extremities cold. Acid mixture continued for six or seven doses.—*Do.*
27	2	29 one day	
29	3	20 two days	
4	4	9 three days	
		1 five days	
IV.—4 Sick.		2 one day	The effects of medicine were as complete as in the three preceding classes One was taken into hospital, having been previously indisposed.—*Dysentery.*
2	4	1 two days	
1	3		
1			

The foregoing table proves either that the cases were uncommonly slight, or that the remedy was uncommonly efficacious, since so short a time was required for the cure. It is true, that the singular severity with which cholera and dysentery appear in some seasons, was fortunately absent in these cases. Yet, considering the unusual heat of the season, the number and constitution of the patients, the most sceptical, I should think, must admit, that there must have been something peculiarly powerful and efficacious in the remedy, since no lingering or mortal case occurred.

It is difficult to conceive how 179 cases of cholera, dysentery, and diarrhœa, could be so soon cured, the progress of the disease being, as it were, forcibly checked, upon the mere presumption that the cases were, in general, mild, unless some efficacy is acknowledged to have been manifested in the remedy; and I am fully persuaded, that, out of such a number of cases, two or three at least of them, under the ordinary treatment, would have proved either lingering or fatal. The form of the medicine, as I have used it in all the cases here referred to, is as under:

℞ *Acid. Nitrosi* ʒ*i.*
Mist. Camphor. ℥ *viij. Misce et adde*
Tinct. Opii, gtt. xl.

Sig. One fourth part to be taken every three or four hours.

A small addition of syrup of red poppies improves not only the appearance of the mixture, but, in some instances, it has appeared to increase its effects.

In chronic dysentery, the dose of two ounces three times a-day is quite sufficient; the remedy is grateful to the taste, abates thirst, soon removes the intensity of pain, and procures, in general, a speedy and permanent relief. No previous preparation is required for taking it, nor any other care whilst taking it, except the keeping of the hands and feet warm, preserving the body as much as possible from exposure to extreme cold or currents of air, and making use of warm barley water, or thin gruel, and a diet of sago or tapioca.

The first dose was frequently rejected by vomiting, along with a considerable quantity of green gelatinous fluid, but I remarked that all such cases were the most rapid in the recovery. Flannels wrung out of hot water, and laid on the abdomen, and bottles of hot water applied to the feet, procured, in general, a profuse sweating, and the second dose of the medicine caused them, for the most part, to fall into a sound and refreshing sleep.

In certain cases, I have found ℥ii. to produce headach, although the quantity of opium has been only ten drops. On these occasions, the pain of the bowels having been found considerably relieved, the medicine was ordered to be taken at longer intervals, unless the tormina and purging returned. A few of the patients complained of hardness of the belly after the purging was stopped, which was always relieved by thirty drops of sulphuric æther in peppermint water.

I have administered the remedy to patients of both sexes, and of all ages, with equal success; but I have not yet ventured to give it to those of a gouty habit, from apprehension that it might prove injurious, though it is very possible that future experience may show that such an idea is altogether groundless.

It is necessary to mention, that the remedy, the good effects of which I now detail, is *nitrous* acid with opium, not *nitric* acid. I have not found nitric acid with opium to produce any good effect, for, having expended my nitrous acid, I sent to a chemist for a fresh supply, who, by mistake, sent me nitric acid, which I used merely by way of trial, but found it not in any way beneficial to my patients.

It has been suggested to me by an intelligent medical officer, that perhaps its efficacy resides in the nitrous gas which it contains. Whether this conjecture be true, I have no opportunity of ascertaining, but I mention it, that those who have leisure and opportunity may make the experiment with the nitrous gas, if they feel the subject worthy their investigation.

I have now mentioned the results of my own experience in the use of that medicine, and am naturally anxious that it should be generally known and tried in every case where it is likely to be useful. I am not so credulous or so sanguine as to suppose it will prove a specific in every case—that it can restore or re-establish the vital powers which seem, in some cases of oriental cholera, to be shaken almost instantly, as if by the fury of a pestilence, or restore the healthy structure of organs which have been long and greatly disorganized. In such extreme examples of disease, I have had no experience, and therefore cannot say with what success the remedy may be attended; yet, from long experience of it in many cases very severe, and some of them hopeless, the very general success which has followed justifies me in presenting it to the notice of all practitioners, and of recommending to them to give it a full and fair trial; and, I am persuaded, if this be done, it will be found to prove one of the most successful remedies hitherto proposed for these diseases, even in their worst form. I can easily make allowance for some incredulity in the minds of many on this subject, because I have found some of my own friends of much experience and sound judgment hesitate about giving it a trial, from the apparent impossibility of conceiving how such a medicine could effect a cure in dysentery and cholera; and some of them have, consequently, never vouchsafed to give it a trial. Some of those who have given it a trial have not had courage to rely with confidence on it in severe cases, but have, after two or three doses, had recourse to bleeding, mercury, and opium. I shall venture to hope, that many of your correspondents, on reading this communication, will be found possessed of more confidence and courage, so far at least as to give the medicine such a trial as may fairly enable them to decide upon its merits, and then I shall have accomplished the only object I have in view, in troubling you with the present observations; being confident that, on a proper trial, the remedy will be found to merit a very high rank in the list of those which possess the power of removing or alleviating the sufferings of mankind

Chatham, April 19, 1826.

ART. VIII.—*Official Correspondence on* Mr Henderson's *Method of Treating the Indian Cholera.*

JOHN FORSYTH, Esq. Assistant-Surgeon, 1st Batt. 1st Regt. Native Infantry.

SIR,—In forwarding Mr Assistant-Surgeon Henderson's letter to you, I beg leave to call your attention to the subject, which is of great importance, and to request you will please to forward to this office a report of your practice and opinion on Mr Henderson's mode of treatment.—I have, &c.

(Signed) J. BROWNE,
Dy. Supg. Surgeon, Caunpore Division.

Caunpore, 4th of October 1823.

JOHN FORSYTH, Esq. Assistant-Surgeon, 1st Batt. 1st Regt. Native Infantry, Caunpore.

MY DEAR SIR,

I have promised you an abridged statement of my method of treating the Cholera, and avail myself of this opportunity to offer you my warmest thanks for your liberality in determining to give it a fair trial in the hospital just instituted for natives in the Bazar.

I have already forwarded my accounts to England for publication, * and I regret that, having no copies of those papers in my possession, the following must necessarily be extremely defective; yet, as a general view, I trust I shall be able to render it intelligible. My practice has been formed on the apparently most opposite accounts received of the disease from the Grand Army in 1817; and, in the year 1819, I had an opportunity of making ample trial of its efficacy, during the period when cholera raged in Bundelcund.

The only position I assume, is, that, during the disorder, a poisonous matter exists in some part of the intestinal canal. I have neither leisure nor inclination, however, again to go over the proofs of this; and as it will be considered by most a self-evident fact, I must entreat you, if not of that number, to await the arrival of my paper from England, before making up your final opinion. Although, however, I require no further data, and though this constitutes the whole of my theory, if theory it can be denominated, I have endeavoured, and I trust successfully, to prove, that it exists in the duodenum or jejunum, and that, though it may be either a poison taken into the stomach, or a secretion from the intestines themselves, from the liver, spleen, or pancreas, it is almost certain that it is one of the last three. Were a poison similar in its effects to arsenic and opium combined, introduced into the stomach, vomiting, gastritis, and death, would be the consequence, yet the bowels would remain constipated; but, were the same poison to find its way into the duodenum or jejunum, a disease in most respects similar to the cholera would be constituted. Were the virus, therefore, in the stomach, vomiting would relieve it, but purging would not take place; and *vice versa.* Supposing then this virus to exist, we can estimate the effects, and comprehend the *modus operandi.*

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* These were published in this Journal, vol. xxiv. p. 38.—EDITOR.

Of all the medicines lately in use for the cure of the disease, viz. calomel, narcotics, blood-letting, stimulants, magnesia, &c. calomel has been the most successful, particularly with natives. Its action is confined entirely to its purgative quality. Narcotics act by diminishing the irritation and reducing the spasmodic action by which the virus is retained: blood-letting in the same way; and stimulants, like blisters in inflammation, by counter irritation. The action of magnesia throws some light on the nature of this poison, by evincing its possessing an acid principle, and that its success has been owing to its antacid, as well as to its purgative qualities. The whole of these, therefore, act directly or indirectly as purgatives; and, according to their powers in this way, so are their results favourable. The use of calomel is however objectionable, 1*st*, On account of the extreme uncertainty of its operation, particularly in Europeans; 2*dly*, On account of the length of time it takes in a disorder rapid in the extreme; 3*dly*, On account of the extreme irritation and spasmodic action it excites in the stomach. The narcotics are objectionable, because, while they slightly relieve the existing spasm, they, at the same time, diminish the action of that part of the canal where no spasm exists; and, when given with purgatives, they occasion a delay, and interfere with their operation; notwithstanding this, however, in regard to success, they rank next to calomel. Bleeding has been found useful with Europeans along with calomel; but their success, even when conjoined, has been but very limited. Stimulants have been generally combined with narcotics; a preparation totally at variance with the principles of therapeutics, and which, if the ingredients were equally balanced, would produce no beneficial effects. Fortunately, however, one or other has usually prevailed, and consequently its exhibition has been attended with trifling success. Magnesia is purgative in proportion to the strength of the acid with which it is combined, being greatest with sulphuric, and least with the carbonic; its purgative quality, therefore, when in combination with an animal morbid acid, must be slight indeed, and its use has consequently not been found very successful in practice.

It remains with me now to detail to you my own plan, the success attending which has, I am happy to say, far surpassed my most sanguine expectations. I have made choice of a purgative from our Pharmacopœia, the most rapid in its action, the most certain in its effects, and the least objectionable to the natives,—the castor oil. Having placed the patient on his back, in a charpey, with his head particularly low, I commence with 1½ ounces of castor oil, and continue giving one ounce every twenty minutes, until the bowels are freely opened by it. The patient is kept in this position by force, and not allowed, until after the operation of the medicine, the slightest motion upon any account whatever. If vomiting should, notwithstanding this, take place, (as it once or twice did in the early stage of my practice, but which never now occurs to me,) a few drops of the laudanum may be given, but, for the reasons above-mentioned, the less of it the better. Stimulants may be given after two hours; not, however, before the castor oil has had time to pass through the smaller intestines, when the favourable symptoms become apparent, long before any evacuation has been produced by the medicine. It is to this fact, in the operation of the castor oil, that I have alluded, as a proof of the disorder having its existence in the smaller intestines; for, if it be allowed that the intestinal matter passed through equal lengths of the canal in equal times, the disease must be seated in them. No native has as yet died under my care in this complaint, who had taken the remedy, and survived an hour afterwards; and those (two in number) who did not survive the hour, had been affected with the disease twenty-four hours, and were in the agonies of death when brought to receive the remedy. Relapses often occur, and must be treated exactly in the same way; the patients, however, are never to be considered out of danger, until the bowels have been freely and thoroughly opened. The after-treatment of cholera is merely to keep the bowels moderately open, giving gentle stimulants to renew the healthy action of the bowels. The bowels of natives, in this disorder, are so inactive, that, at first, it often requires half-a-pound of castor oil, or upwards, to produce any effect. The natives are, however, less liable to cramps, which are to be palliated only by friction when they occur; they, however, always go off long before the operation of the medicine.

These remarks, you must be aware, are chiefly intended for natives; but, had I the charge of Europeans, and found any difficulty in getting the castor oil to operate on their bowels, (a circumstance very improbable) I would substitute the oil of turpentine in exactly the same doses as the castor oil. Vomiting the medicine, if properly given, I conceive to be almost impossible; and I feel convinced, that no stronger purgative than the castor oil will ever be required.—I am, &c.

(Signed) J. HENDERSON.

Caunpore, September 6, 1823.

JOHN BROWNE, Esq. Deputy Superintending Surgeon,
Caunpore.

SIR,

I take the earliest opportunity of replying to your letter of the 5th instant, calling my attention to the importance of the subject of Mr Assistant-Surgeon Henderson's communication to me, and requiring a report of the success of the method of treatment of spasmodic cholera suggested by him; and I trust that the following brief detail will not only evince a truly satisfactory result, but place the efficacy of the practice beyond dispute. Having, on one or two occasions, heard it partially described by Mr Henderson: the opinions he entertained, as well as his reasoning on the nature and seat of the disease, appeared to me so judicious, and the never failing success which, he affirmed, attended the practice, so far surpassed that attained by any mode heretofore recommended, that I determined to adopt it on the first occasion that offered.

The unfortunate breaking out of the disease in the Bazar at this place, (where the return of the deaths was from twenty to thirty daily,) presented the desired opportunity; and being luckily directed to superintend the temporary hospital established in consequence, I was enabled to pursue the plan in question, although not under such favourable circumstances as could have been wished for a fair experiment. In estimating its efficacy, therefore, I beg that the many obstacles may be taken into consideration which we had to encounter in the attainment of even the result here afforded; namely, the fatal termination of eleven of the seventy-four cases admitted into the hospital, or who had the medicine administered to them in their own dwellings. In the first place, three days had elapsed before a site was fixed on for the hospital, and its etablishment completed; during which time the native doctors were under the necessity of traversing the whole Bazar in quest of the patients, never being allowed sufficient time to see that the directions (on which so much depend) were strictly attended to, or that the remedy was regularly exhibited. On the other hand, even after the hospital was opened for their reception, it was a matter of great difficulty to induce them to resort to it in time to be benefited. Almost all the fatal cases were admitted in such a state of collapse as, from the beginning, to preclude all hope of recovery; indeed, one or two of them were already in *articulo mortis.* I need not mention how different the result would have been, had the malady made its appearance among the native soldiery, where, from their state of discipline, every case must necessarily have been recent.

The method of exhibiting the castor oil, as fully detailed in Mr Henderson's letter to me, (a copy of which has been forwarded to you,) was, in every particular, most strictly complied with; and in every case was the recovery complete when they were not admitted under the unpromising circumstances above noted. The oil was very seldom rejected after it was received into the stomach; as by forcibly detaining the patient in the recumbent posture, that organ was in some degree deprived of the aid of the abdominal muscles, and every effort to disgorge itself was effectually resisted. It would seem that, as soon as the medicine had reached the *seat* of the disease, some alleviation of the symptoms ensued, yet rarely so remarkable as to induce us to remit in its administration. It was therefore continued until free and copious dejections were procured, after which the prognostic was always favourable, and recovery followed, more or less rapidly, according to the ages, habits, or violence of the attack.

Such, however, was the extreme torpor of the small intestines, that very often from four to ten ounces of oil were swallowed before the operation commenced; and in one case of considerable exhaustion, eighteen ounces were given before a motion was passed. In general, the operation commenced from one to three hours after the first dose. The first perceptible change for the better, was the return of the circulation to the larger vessels of the extremities, which was evinced by the pulsation becoming distinct, and gradually increasing in strength, followed by warmth and sensation. The spasms began to abate, in most cases, soon after the first evacuation, and quickly ceased altogether. They were in some degree palliated by frictions with warm oil and powdered ginger; and this was the only remedy, throughout, that was employed in aid of the castor oil. The stools procured by the medicine were very various in appearance; more or less liquid; sometimes of a yellowish colour. At other times they consisted of shreds of white matter, suspended in a dark discoloured fluid, and not unusually of an atrabilious aspect; never at any time, in the slightest degree, resembling the matter peculiar to the disease. The urine, when first voided, and for some time after the operation of the medicine, was, for the most part, scanty and high-coloured. The urgent thirst which usually attends the complaint did not yield so readily as the other symptoms; but it was, in many instances, kept up by the reaction which succeeded.

I have now stated all that at this time suggests itself to me; but should anything further occur to you, I have to request that you will kindly make it known: indeed, from the bustle I am now in, preparing to leave Caunpore, I fear it must be very imperfect, yet not so much so, I trust, as to leave a doubt on your mind as to the superiority of the practice to any that has preceded it. I have the honour to be, Sir,

Your most obedient servant,
(Signed) J. Forsyth, *Assistant-Surgeon.*
Caunpore, 7th October 1823.

Art. IX.—*Case of a Peculiar Malformation of the Female Genital Organs.* By Robert Hunter, Surgeon, and Lecturer on Anatomy and Surgery, Glasgow.

ABOUT three years ago, an aged female subject was casually brought into my theatre of anatomy, whose organs of generation were peculiarly malformed, and complicated with some remarkable morbid phenomena.

The *subject* being very fat, the external organs seemed, at first view, to present nothing unnatural. When placed, however, in a favourable position for displaying these organs, a thick fleshy membrane was discovered, extending from the urethra to the *fourchette*, and of course dividing the orifice of the vagina into two equal openings. This appearance of the parts immediately suggested the idea of a double vagina; but a closer examination proved the conjecture to be only partially correct, for this *septum* was found to extend upwards about an inch only into the vagina, and from that point to the uterus the canal was single.

The septum itself was strong and elastic; about a quarter of an inch in thickness; apparently of the same structure as the vagina, and covered with a mucous membrane full of deep rugae.

The mons veneris, labia majora, and clitoris were perfectly well-formed; but the nymphae, notwithstanding the fatness of the subject, projected a little beyond the external labia; and, instead of terminating, as they usually do, opposite the middle of the opening into the vagina, they reached the lowest part of the vulva, and were continued even into the lining membrane of the anus. No perineum, then, could be said to exist. The unnatural appearance of the parts, arising from the proximity of the vulva and anus, was very remarkable, and this was rendered still more striking by other morbid appearances, the extremity of the rectum being contracted and studded around with small hemorrhoidal excrescences.

The internal generative organs were next examined *in situ*; but without waiting to describe minutely the morbid appearances which were displayed in this stage of the dissection, it may only be observed, that two tumours were, in the first place, discovered to arise from the anterior surface of the body of the uterus, one of which was as large as a lemon, and the other scarcely attaining the magnitude of a walnut. The larger was attached to the left half of the organ, and when cut into, appeared to be composed of condensed cellular membrane, traversed with streaks of a cartilaginous-looking substance. From the magnitude of the tumour, both bladder and rectum were compressed, and the uterus itself pushed somewhat into the vagina. The smaller tumour was seated about an inch from the right *cornu uteri*, and was evidently formed by a circumscribed swelling of the substance of the uterus; for, by an incision, it was found incorporated with the uterine paries, and distinctly evincing the same texture.

The uterus itself was about double the ordinary size; both ovaries were diseased, and the Fallopian tube of the left side impervious. The ovaries, however, were differently affected. The one on the right side consisted of two portions, and was altogether much shrivelled, and the one on the left side was converted into a bag containing a semi-transparent fluid.

After examining the generative organs *in situ*, they were removed from the body along with the other pelvic viscera, and more minutely inspected. Before the bladder and rectum were separated from the uterus they were also examined. The bladder was healthy, but the rectum was contracted, thickened, and a little indurated. No cicatrix, however, could be discovered, either on its external or internal surface.

By insulating the uterus, its size was accurately ascertained. It measured six inches from the one Fallopian tube to the other, and from the fundus to the os tincæ about four inches.

The vagina was next laid open from behind, without injuring the septum at its orifice, and a probe introduced into the mouth of the uterus to explore the uterine cavity. The probe had scarcely passed through the *os tincæ* when it became obstructed; when the point of the probe, however, was turned a little either to the right side or to the left it could be carried with ease to the fundus.

By continuing the dissection, the body of the uterus was found divided into two compartments, by a kind of partition, which descended in a straight line from the *fundus* to the *cervix.* When the anterior and posterior walls of the uterus were forcibly separated from each other, this partition became remarkably distinct. When viewed in such circumstances, it was about half an inch in thickness at the fundus, and gradually became thinner as it approached the cervix, where it terminated by a rounded margin not exceeding three lines in thickness. When the walls of the uterus were *not* forcibly separated from each other, no distinct partition could be recognised, but the cavity of the uterus was divided into two compartments by an adhesion, apparently of the anterior and posterior walls, in a line from the *fundus* to the cervix. Both cavities presented overpowering evidence of much previous morbid action. The lining membranes of both was converted into a spongy fungous-like layer, and studded thickly with the germs of polypi. The left cavity likewise enclosed a polypus of considerable size, which arose by a narrow pedicle. It was of a pyramidal form, and decidedly of a fibrous texture. The right cavity enclosed two polypi of a similar description, and a fleshy tubercle about the size of a common marble.

Of the history of the *subject*, I unfortunately know very little, and for that little am indebted to a medical practitioner, who had been acquainted with her previous to her death. From that source of information, I learn that she died at the age of sixty years. When twenty years old, she entered into the married life, and was subsequently delivered of a daughter, who is at present alive. Her *accouchement* was eminently unfortunate. For years after that event, she could retain neither urine nor feces, and what added to the calamity, the feces passed continually by the vagina. In so miserable a plight was she left after delivery, that she was obliged to forego the pleasures of the nuptial bed; but, to render her husband as comfortable as possible under such trying circumstances, she invited a female cousin to her house, with whom the husband lived, and had afterwards a numerous progeny,

From this history of the subject, which I believe to be substantially correct, I think we are led to the conclusion, that the state of the parts above described is attributable rather to accident and disease than to original formation. Much disease had evidently existed in the internal generative organs. The magnitude of the uterus; its fleshy tubercles; the obliteration of a Fallopian tube; the conversion of an ovary into a bag of fluid; and the fungous-like state of the internal uterine membrane, prove that a long-continued, if not a violent, morbid action had been preying upon the parts. Amidst such a chaos of disease, it is not impossible that the anterior and posterior walls of the uterus should unite at different points, or even in a line from the fundus to the neck, and thus form, as in the present instance, two distinct cavities in the body of the uterus.

Admitting this explanation to be satisfactory with regard to the formation of the septum in the *uterus*, how is the septum at the orifice of the vagina to be accounted for? Had such a septum existed *previous* to delivery, it obviously would have formed a strong, if not an insuperable, barrier to parturition. At all events, that barrier must have been broken down before the parturient act could have been effected; and if once destroyed, it is not likely that it would have been regenerated. The probability then is, that it had been formed *after* parturition; and how that must have taken place, I shall now attempt shortly to elucidate.

One striking circumstance in the parts above described, is the non-existence of a perineum. What then is become of it? Had it never existed, there would have been, I conceive, a less ragged diseased-like state of the parts than was found. If the perineum had been removed, we can only suppose that this took place during parturition; for, during that important crisis, the perineum is particularly interested. It is always overstretched, frequently partially lacerated, and sometimes even torn from the fourchette to the anus. These are common occurrences; but none of them could produce such a state of the parts as we have described above. Had the recto-vaginal septum, however, given way during the passage of the child's head, the perineum might have been very differently affected. The head of the child, under such circumstances, would have taken the direction of the anus, and the perineum, instead of being slit across, might have been torn altogether from its situation, or left attached by a shred merely to the surrounding parts. Had the loose extremity of the perineum, in such circumstances, come into contact with the lining membrane of the vagina, from the violent inflammation which must have been induced, adhesion obviously might have taken place, and a septum at the orifice of the vagina formed by the perineum would have been the consequence.

Glasgow, 47, *North Hanover Street.*

ART. X.—*Case in which the Head of the Humerus was successfully Excised.* By JAMES SYME, Esq. Lecturer on Surgery, &c. *(With an Engraving.)*

CHRISTIAN LAING, æt. 38, married, the subject of the following case, was recommended to my care by Dr Belfrage of Slateford, about the middle of last summer, (June 1825.)

She complained of her left shoulder, the articulation of which was nearly immoveable, though the perfect mobility of the scapula rendered this not very obvious. There was a small opening directly under the extremity of the acromion, about half-way between that process and the humeral attachment of the deltoid, and there was another of similar appearance, situated over the clavicular portion of the pectoralis major, about the middle of its course. Both of these openings led to extensive sinuses, which allowed the probe to pass obliquely towards the joint, but not to reach the bone. The discharge was thin and copious. The integuments were nearly natural. The acromion and coracoid processes seemed to be enlarged; but, in other respects, there was not much swelling about the joint. The limb was entirely useless, being kept constantly suspended in a sling. The patient stated, that she occasionally suffered much from shooting pains in the shoulder, and extending thence down the arm even to the fingers. She was a healthy-looking woman, apparently somewhat exhausted by anxiety and suffering, but had no remarkable complaint except that just described.

On inquiring into the history of the disease, I was told, that it had commenced six years before, in consequence of her falling from a wall, about two feet high, upon the shoulder, the effect of which accident was pain, and stiffness of the joint, gradually incapacitating her for work,—and at length inducing her, after five years of great, though unpitied, suffering, there being no visible imperfection, to employ a bone-setter, who used very rough measures, and no doubt aggravated the mischief. In the course of the succeeding year, a large abscess on the fore part of the joint was opened by an eminent surgeon in town. On returning home to Roslyn after this operation she caught cold, and was confined to bed for six weeks. Another abscess then formed, and opened naturally not long before the time I saw her.

From an attentive consideration of all the circumstances now detailed, I strongly suspected that the bones of the joint were diseased, and that a severe operation would be required for restoring the patient to health. But not seeing any reason for haste, and being very averse to proceed rashly in so important a matter, I contented myself with dilating the sinuses, and recommended her to call upon me occasionally. Not long afterwards, I opened an abscess in the axilla; and then, as her health became a good deal impaired, I advised a return to the country.

I saw nothing of the patient until the beginning of last March, when I was asked to visit her at Slateford.

She seemed to me much thinner and weaker than formerly;

but the joint was little altered, excepting that, in addition to the sinuses already mentioned, there were two more, viz. one in the axilla, remaining after the abscess I opened there, and another on the posterior part of the joint, just above the margin of the axilla, resulting from an abscess discharged in the Royal Infirmary of this place, whence she had been discharged two months before, after a residence of several weeks. She now suffered more than ever from an almost incessant gnawing pain; slept ill; had little appetite; and found herself becoming every day weaker, owing to a troublesome diarrhœa.

Though it was still impossible to pass a probe through any of the sinuses to the bone, and though no crepitus could be perceived when the joint was made to undergo that slight degree of motion which it still possessed, I, nevertheless, now felt fully satisfied that nothing but an operation afforded any chance of relief, and accordingly proposed to cut down upon the joint, to ascertain its condition, and then remove the diseased bone alone, if possible—or, together with the limb, if circumstances should render this necessary. It was agreed, however, that nothing ought to be done in the meantime, as the intestinal functions were a good deal disordered.

In the course of a fortnight, the patient's general health being much improved, through the kind and skilful care of Dr Belfrage, I requested my friend Dr Dease, surgeon to the forces in North Britain—a gentleman whose professional reputation is too well known to require any expression of my sincere respect—to examine the state of the joint, and he coinciding completely with me as to the necessity and practicability of an operation, I determined on performing it without farther delay.

On Saturday the 1st of April, assisted by Dr Dease, and in the presence of as many friends and pupils as the room could contain, I proceeded as follows:—

The patient being seated on a chair, I made a perpendicular cut from the acromion through the middle of the deltoid, extending nearly to its insertion, and traversing one of the old sinuses. Introducing my finger into the opening thus made, I felt that the disease was chiefly, if not entirely, confined to the head of the humerus; and, therefore, cutting in a semilunar direction, backwards and upwards, from the lower extremity of the first incision, I formed a large flap from the external or scapular portion of the deltoid, which being held up, exposed the joint so far, that I was able to insulate the head of the bone by means of my finger, and then to detach the scapular muscles from their connections with the tuberosities, when, the arm being brought forwards, I easily protruded the head of the humerus, embraced it in my left hand, and sawed it off without any injury to the soft parts.

I next examined the scapula, and had the pleasure of finding the glenoid cavity perfectly sound, though deprived of its cartilage. The coracoid process, also, seemed to be free from disease; but, as the acromion, at its extremity, was bare and rough, I removed a portion of it with the cutting plyers.

On making the first incision, there was a rather alarming gush of blood; but the only artery of consequence divided during the operation was the posterior circumflex, which Dr Dease compressed with his finger until I completed the excision. This vessel was now tied, and then the flap being replaced, was retained in perfect apposition by five or six stitches of the interrupted suture. The only additional dressing consisted of some lint compresses, and two or three turns of a bandage.

The whole operation, including the application of ligature and insertion of stitches, occupied ten minutes. The patient bore it remarkably well, and lost very little blood. She passed a quiet day, and had a good night. Next morning I removed the dressings, and replaced them, with a few slips of caddis, over the lips of the wound, which were generally adhering. I visited the patient on Monday, and was told, that, on the preceding evening, she had had a slight rigor, which lasted for a quarter of an hour, and had been restless through the night. The pulse was now 110, her skin hot, and her tongue dry. There was a diffused redness, and slight swelling of the arm, between the wound and elbow. I immediately bled her to fourteen ounces, and directed small quantities of a weak antimonial mixture to be taken frequently.

On Tuesday there was no complaint but thirst and nausea. The wound was generally adhering; but, at the site of the old sinus, under the acromion, a dark-coloured and fetid discharge issued in considerable quantity.

On Wednesday, the erysipelas was subsiding.

On Thursday I was informed, early in the morning, that, during the evening before, the patient had become suddenly and alarmingly weak, so as to frighten not a little those about her, who were induced to give a little wine, from time to time, through the night. When I saw her, she was considerably recovered. However, as there was no fever remaining, and as she expressed a desire for food, I prescribed beef-tea, arrow-root, &c. in small and frequent doses.

On Friday, she was better in all respects; the discharge was diminished and less fetid.

After this the cure advanced regularly and rapidly, so that by the end of the second week she was able to move about a little. In the course of two weeks more, the wound was healed, though the sinus continued to discharge for some time longer. Indeed, the one of oldest formation still affords a small quantity of matter—but this, I have no doubt, will soon cease. In the meantime, the patient is, as she has been ever since the operation, entirely free from pain. The limb is shortened somewhat less than an inch; it is no longer supported in a sling, and the shoulder-joint is susceptible of distinct motion, in all directions, by means of its own muscles—while all the other joints are as serviceable as they ever were.

Fig. 1. Represents the portion of bone removed, viewed posteriorly. The head of the bone is hollowed out into a large cavity, so that there remains but a mere shell of bone, whose surface externally, though divested of cartilage, seems to be healthy, but internally displays very distinctly the character of caries, appearing as if lined with slender pyramidal, or rather needle-shaped crystals, projecting towards the centre. Previous to maceration, this cavity was lined by a thick and vascular membrane.

This case, in which a disease of the shoulder-joint, existing for *seven* years, rendering the arm entirely useless, embittering the patient's life, and at last threatening to destroy it, was effectually remedied by excision of the diseased bone, I submit to the public, confidently hoping that it will have the effect of recalling attention to the bold, but prudent and successful, innovation of White.

Soon after White of Manchester published his case in the Transactions of the Royal Society, nearly sixty years ago, Mr Bent of Newcastle, and an eminent surgeon of Chester, Mr Orred, followed his example with success. But, since that time, though the preservation of a limb, more especially of one so useful as the arm, must be a great object to all honest practitioners, no British surgeon, so far as I know, has recorded a single instance in which caries, or other disease of the shoulder, has been cured by excision of the bone. *

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* Excision of the comminuted bone has been frequently performed by military surgeons in gun-shot wounds of the shoulder-joint. Baron Larrey is of opinion, that when a ball traverses the limb, so as to detach the head of the humerus from its shaft, either excision or amputation is absolutely necessary for saving the patient, and has accordingly performed the former operation in such cases ten times. The practice of British surgeons affords reason for questioning the truth of this position, and excision has been less often performed by them.

In the seventh volume of the Medico-Chirurgical Transactions, there is a very interesting case detailed by Mr Morel, in which he preserved a soldier's arm by removing the fragments resulting from a gun-shot wound, inflicted five months before at the battle of Waterloo. The case is particularly interesting, in so far as it was

It cannot be supposed that the cause of this deficiency has been want of opportunity, since amputation at the shoulder-joint for caries is an occurrence by no means rare in civil practice; and I must attribute it entirely to prejudice against the operation, arising probably from fear of the difficulty and danger attending its performance.

The difficulty of the operation depends in a great measure upon the manner in which the flaps are formed.

White, Larrey, and Charles Bell, advise a single perpendicular incision from the acromion, and this will suffice when the soft parts are healthy, when the bones are recently comminuted, or when the head of the bone has been much diminished by disease, as in White's case.*

Bent made a perpendicular incision, commencing about midway between the acromion and coracoid processes, and then cut inwards or towards the sternum from both extremities, so as to form a flap from the clavicular portion of the deltoid and the pectoralis major; a proceeding certainly very dangerous to the axillary vessels, &c. and, as I should think, not at all convenient.

Sabatier proposed to extirpate a portion of the integuments and deltoid, of a $\overline{\bigvee}$ shape.

Moreau made a square flap from the deltoid, turned it down, and then, if necessary, gained more room, by extending the transverse incision in both directions.

Morel made a semilunar incision, with its convexity downwards, so as to form a large flap from the deltoid.

The method I followed seems preferable to all of these, and others that I might mention, as being easy, rapid, and effectual, endangering no large vessel, leaving a part of the deltoid entire, so as to support the arm, and allowing the insulated head to be protruded with perfect facility.

The difficulty of operating depends farther upon thickening and induration of the soft parts, owing to the long-continued irritation in their neighbourhood, which prevents natural retraction and easy dissection. This morbid change certainly does complicate the matter considerably; but provided the flap is properly formed, the surgeon will not be prevented by this

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performed several months after the injury had been sustained, when of course the difficulty of operating was infinitely greater than it would have been in the first instance. The excision alone occupied three quarters of an hour, and two pounds of blood were lost.

* Some have alleged, that, in Mr White's case, the head of the bone was not removed, but being detached from the shaft by disease, remained in its place, so as to unite with the regenerated shaft, and thus restore that perfect articulation which seems otherwise no less extraordinary than inexplicable.

cause from effecting his purpose readily and easily. In the case just related, the change in question had been going on for seven years, and yet the excision was completed in three minutes,—a sufficient proof that the difficulty encountered could not have been very great.

As to the danger of the operation, I believe there has been much groundless terror, owing to forgetfulness of the difference which exists between the condition of a diseased and healthy joint. In an old case of caries, the whole articulating apparatus, so ready, when healthy, to resent any violence offered to it, is removed, and the only parts injured in cutting out the bone are those concerned in any ordinary case of amputation; but when it is recollected, moreover, that all the great vessels and nerves are left untouched in the case of excision, no one surely will maintain that this is a more severe operation than removal of the arm.

I subjoin a case which has lately come under my charge, as it agrees in many respects with that of Christian Laing, and tends, I think, to show that the operation of excision has been too much neglected.

Between four and five years ago, J. B., then 36 years of age, a strong and previously healthy man, during the cold weather of winter, felt a sudden and severe pain in the left shoulder, which immediately rendered him incapable of moving the joint. Soon afterwards the integuments becoming red and swelled, his surgeon, one of the most eminent in town, told him, that he had got the rose, and directed the inflamed parts to be covered with flour. In the course of a year, several abscesses formed about the joint, and were opened by the same surgeon. They did not heal, but continued to pour out a thin and copious discharge.

He had recourse at last to another practitioner of eminence, who prescribed injections for the sinuses; and when no good resulted from their administration, contented himself with increasing their strength.

Having been all this while racked with cruel and nearly incessant pain, the patient applied, towards the close of the second year of his suffering, to another surgeon, who assured him that the disease was nearly subdued, and that tight bandaging would soon make all right. After a fruitless trial of this advice, he determined to abjure the doctors, and let things take their own course. It so happened that, about the time this resolution was formed, the pain abated considerably, and during the eighteen months that succeeded, he lived in tolerable comfort. Six months ago, his strength, which had hitherto been little affected, began to give way. A troublesome cough came on, and he was soon little more than the shadow of himself. More lately, the pain recurring, he applied to me.

The affected shoulder strikingly resembles what Christian Laing's was previously to the operation. There is more wasting of the deltoid, whence the bones appear more distinct and larger than natural. There are many sinuses, opening much about the same place as those of the former case, and all running towards the joint, though one only, whose orifice is at the posterior margin of the axilla, allows a probe to reach the bone. There is very little mobility of the articulation, but that little, when exercised, is not attended with crepitus. The patient's pulse and appetite are good, but he is very thin and exhausted-looking; his cough also is troublesome, particularly at night. He is quite resigned to suffer any thing I choose to propose, and the diseased bone, though perhaps not entirely confined to the humerus, may, I believe, be easily removed; but it would not be prudent to attempt an operation until his general health is in a less unpromising state than it seems to be at present.

It is almost needless for me to express my conviction, that this unfortunate person might have been easily and effectually cured during the first four years of his illness.

6, *Forth Street*, 12*th May* 1826.

Art. XI.—*On the good Effects of a Mixture of Acetate of Lead and Tincture of Opium, in the Dysentery which occurred in Dublin in* 1825; *with a short Description of that Epidemic.* By Ulic Burke, M. D. Communicated by Dr Alison.

I have been induced to submit the following cases of dysentery for publication in the pages of your Journal, not for the purpose of introducing any thing novel in the treatment, nor, indeed, with the expectation of being able to throw any new light on the pathology of this disease; but with the hope, that the practice I have found so successful in a very great number of cases may be more fully investigated by others, so that we may know with, at least, a tolerable degree of certainty, to what extent we may prescribe a remedy, which has hitherto been looked on with a great degree of suspicion, and even distrust.

I am fully aware, that the acetate of lead has been often employed in this, as well as other diseases, where a powerful astringent has been required; it has also been given (as in the present cases) in conjunction with opium; but, as I do not know that it has ever been used to the extent I have done for some time, this, and this alone, has been my reason for selecting for publication the following, out of upwards of 250 cases, which have been treated in the same manner, and with almost uniform success:

John Short, ætat. 23 an., of spare habit, had been, for ten days previous to my visiting him, affected with dysenteric symptoms. When I saw him (July 24th) he complained of very slight pain of abdomen on pressure, but he stated it to be excruciating previous to each dejection; constant and most painful tenesmus; dejections consisting entirely of blood, with, occasionally, a small quantity of slimy matter; tongue clean, rather dry; skin harsh and dry; not much thirst; no appetite; had taken several doses of the ol. ricini without any relief. He attributed his complaint to hard labour, and to his living almost solely on oatmeal. On the 24th, I prescribed for him half an ounce of the ol. ricini, with thirty drops of the tincture of opium, with fomentations to the abdomen; he slept ill that night, and the next day, the symptoms not being at all alleviated, I directed him to take half an ounce of the following mixture every fourth hour,

℞ *Acetat. plumbi, gr. iv.*
Aq. distillat. ℥ii. Solve. Solutioni adde
Tr. Thebaicæ ʒii.

After the second dose of this mixture, the whole of the symptoms were mitigated, the tenesmus considerably abated, and the tormina ceased. He took a third dose at bed-time, slept well, and the next day was free from complaint. He quickly recovered his health and strength, and had no return of the disease.

On the 27th July, his brother, aged 56, his sister, aged 19, and his younger brother, aged 16, were severally attacked with the same complaint. After evacuating the bowels of each with a dose of ol. ricini, a similar mixture, paying attention to the age and sex of each, was administered, and with equal success; two, and at most four, doses putting an almost immediate stop to the disease.

Jane Handstock, ætat. 27, of a leucophlegmatic habit, had been eight days ill previous to my seeing her; had tried various remedies without relief; was so weakened as to be unable to leave her bed. She complained principally of the tormina, and most distressing tenesmus. She was prescribed for as in the former cases. After the second dose, she felt herself, as she described, as if she were in Heaven, being completely relieved from every painful symptom. She left her bed next day, and having got wet feet, the disease returned. She had some of her mixture remaining, which she took on going to bed, and with the best effect, as she had not afterwards any return of the complaint.

John Ward, ætat. 45, was seized on the 21st July with pain in the umbilical region, followed on the same night with diarrhœa, attended with some tenesmus. He continued thus, without paying any attention to it, until the 26th, when his dejections became bloody, accompanied with violent tormina. I then saw him. He was ordered an ounce of the ol. ricini, with tincture of opium, fomentations to the abdomen, and at bed-time an injection of starch, with eighty drops of the tincture of opium. He passed a bad night, and, as he was not better on the next day, the mixture, in nearly the same proportions, was prescribed. He took four ounces on the 27th, with great relief to the tormina and tenesmus: his dejections were still mixed with blood on the 28th, during which day he had no medicine; on the 29th the mixture was repeated; he took nearly three ounces of it on that day, and the 30th he was free from all complaint. He resumed his employment as a labourer on the 2d of September.

Mary Sheridan, ætat. 23, a servant, of spare habit, was attacked on the 6th of September, without any apparent cause, with pain in the abdomen, followed almost immediately by bloody dejections, attended with tormina and tenesmus. I saw her on the eighth. She complained very much of the tenesmus, and was much weakened, as she said, from the almost constant loss of blood. I immediately prescribed the acetate as in the former cases. She took two ounces of the mixture on that day, and with visibly good effect; she slept well. On the 9th the catamenia appeared; the mixture was intermitted; but on the 10th, as the dysenteric symptoms returned, and even with more violence than at first, it was repeated. She took three ounces on that day. All her distressing symptoms disappeared before night. The medicine had no effect on the catamenia, which continued the usual period, and were even more abundant than ordinarily.

I think it unnecessary to multiply cases, as the only variation they could present would be in the age, sex, habit, or some other accidental circumstance of the patient. I have notes of thirty-five other cases in which the treatment has been similar, and the success the same; and I have prescribed in the same manner for upwards of 200 more,* of whom I have not taken any notes; but I have reason to think, from after inquiries, that it was successful in at least a very great majority of them.

I was induced to give a decided preference to this remedy, from its peculiar mode of action. It gave almost immediate relief to the constant tenesmus, which in most cases was highly distressing. This effect I have seen (after the employment of other remedies, and when every other symptom of the disease had disappeared,) continue to torment the patient for several weeks, and obstinately resist every mode of treatment. Also, I have not remarked, that, in any case, the sudden check it gave the disease, which, with the poor, whose labour is their sole dependance, was particularly desirable, was followed by any bad consequences. The case of Sheridan presents something peculiar, for though the medicine put an immediate stop to the flow of blood from the intestines, it had no effect on the catamenia.

I was willing to try the effect of the acetate when given alone. I therefore prescribed it in one case, that of a robust young man, in doses of two grains, made into a pill with crumb of bread, to be given every hour. I watched him during five hours. It was followed by no bad effects, his dejections ceased to be attended with blood; but the tormina and tenesmus still continuing, he got an enema of a pint of starch, with sixty drops of laudanum, which he retained for four hours. The tormina ceased, but the tenesmus continued three days afterwards, and then disappeared.

I have not seen any advantage resulting from the use of the lancet, or repeated purgatives, in this disease. In two cases, where bleeding seemed strongly indicated, a rapid prostration of strength followed the employment of the lancet, and the patients almost immediately after died; and, in three other cases, in which purgatives were used in the commencement, peritonitis supervened, and, notwithstanding every exertion, carried off the patients.

The warm bath was sometimes an useful auxiliary when other remedies were employed, but from the period I began to use the acetate of lead, I very seldom had occasion to order it. Its best effects were observed on children under ten years of age.

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* The parishes of St George and St Thomas, to the Dispensary of which I have been for some time attached, are very populous, and it is computed that one out of three is in a state of pauperism. This will account for the number that fell under my observation.

The first cases that fell under my observation occurred in the first week of July. I make no doubt, however, that the disease existed in the city prior to that period. During this and the succeeding weeks of July, the numbers attacked were so great as to force themselves on our observation. It went on progressively increasing to the middle of August, so that in one day, out of thirty-five patients who applied to the Dispensary for medicine, more than three-fourths were dysenteric cases. Its increase during the latter part of this month and beginning of the next was still greater, and, up to the 10th of September, it had made rapid and fatal strides over the whole of the north and north east districts of the city, scarcely one single family of the poorer order escaping its ravages. At this time, I had a severe attack of typhus, from which I did not perfectly recover till the beginning of November. My remarks are, therefore, necessarily confined to the period intervening between the 1st of July and the 10th of September. The symptoms of the disease were very irregular in their appearance. It sometimes, and most frequently, commenced with a diarrhœa that continued for a few days; an obtuse pain in the umbilical region then began to accompany each dejection, increasing each time in violence, though not much increased by pressure. Tenesmus of the most painful nature attended the tormina; the dejections became bloody; and in this state the disease assumed its utmost violence. In other instances, and without any previous warning, all the symptoms attacked the patient simultaneously. The tongue, in the great majority of the cases, remained clean; not much thirst. The pulse in general was peculiarly intermitting; in some cases no difference could be remarked in it from its most healthy state; in some few it was a little more frequent than usual; the heat was in general natural. But three cases occurred to me in which the dejections showed scybala. An attack of cholera sometimes preceded the dysenteric affection. It did not seem to me that the disease was essentially contagious. That it might have been so, in some instances, from numbers being crowded into the same ill-ventilated chamber, from filth and other such causes, I do not question; but its general character was otherwise. I have seen the father and son labouring under its influence, while the wife or mother who attended them, and even slept in the same bed, by a slight attention to cleanliness, remained free from the disease; and this frequently occurred. I attribute this to the absence of a specific fever in the great majority of cases. In the very few cases in which it occurred it was of the typhus character, and, in the greater number of these, the two diseases seemed rather to co-exist than to have owed their origin to the same proximate cause. I had some patients who were relieved from the fever, while the dysenteric symptoms continued unabated, and *vice versa.* I have not the slightest doubt that *early* venesection has very often proved of the greatest utility, but I have had but few opportunities of thus trying it, and where I have seen it employed during the late epidemic, the results were far from being satisfactory. The poor of this city (to whom my practice was chiefly confined) are the most wretched beings in existence. Depending on constant and unremitting labour for the most scanty and miserable support for themselves and their families, they pay but little attention to what would excite alarm in others, and, hoping that any disease they may be attacked with, will, as they express it, wear away in a few days, they do not, until nature is almost exhausted, apply for medical advice. The length of time intervening between the first attack of the disease and application for assistance; the very great debility in consequence of it, increased by previous hard labour, and scanty, often unwholesome diet, deterred me in the first instances from employing the lancet; and the success attending the use of the acetate of lead, induced me afterwards to prescribe it in cases in which I might otherwise have perhaps been tempted to bleed. I may add, that I have consulted several of my professional brethren on this subject, and they have without exception answered, that they did not find venesection of such utility in the late epidemic as they would have *a priori* supposed, and that they very seldom had recourse to it. I must, however, in justice add, that many of them informed me that they employed other means of diminishing vascular action. I am very, very far indeed, from wishing to propose the acetate of lead and opium as a panacea in every case or every species of dysentery; I have not thus employed it myself; but, should the disease again present itself under the same circumstances as in the late epidemic, I would beg leave to propose its employment under the following regulations:—When the patient is low and weak, either from the continuance of the disease, or from previous bad diet; when the abdominal pain is not constant, nor much increased on pressure; when there is little or no fever, as in most cases of the late epidemic; and when the tenesmus and exhausting flow of blood from the intestines form the principal subject of complaint, I would then unhesitatingly, and with confidence, have recourse to it. I have employed it in cases somewhat different from those I have now contemplated, and with success; but in those, (and the greater number that came under my observation answered this description,) I know not any other medicine of equal value.

Art. XII.—*Case of Infanticide, with Remarks.* By David Scott, M. D. Cupar-Fife.

Medical Jurisprudence, of late years, has very much engaged the attention of British practitioners; and it is matter of great surprise, that a science of such importance and intricacy, of such vital interest to the community, and extending over such a field of observation as to require, on the part of the medical investigator, the utmost stretch of his professional knowledge and abilities, should have been so long in attracting that attention which its magnitude deserves. Also, when we reflect on the state of the medical profession, the learned and unlearned that are spread over every part of the kingdom, and that the least, as well as the greatest of these are liable, at every moment of their lives, to be called in to decide in a case of poisoning, homicide, or prolicide, it is certainly not too much to assert, that this science is, at least, entitled to some portion of their attention; because, however successful a medical man may be in the ordinary routine of practice, however circumspect his conduct, and however much his skill may be acknowledged by the common herd of mankind, who, in general, are little capable of appreciating merit from demerit, of distinguishing the substance from the shadow; yet it is a very different thing when his opinion comes to be canvassed in a court of law; because there mere opinion will not suffice,—it is the reasons for such opinion that are of any avail. Now, reasons are sometimes very perplexing things; and we think it is, in a great measure, owing to the want of the habit of close reasoning on the part of many medical men, together with the uncommonness of their situation, that some of them have made so awkward an appearance before the judge and jury, and greatly disappointed the expectations of their friends and admirers. But we cannot convey a more just conception of the utility, importance, and magnitude of this branch of study, than in the elegant and impressive language of the classic Paris. "Under no circumstances does medical science assume so imposing and dignified an attitude, as when regarded as a branch of legislation. Disentangled from the web with which worldly caprice, credulity, and empiricism, are ever seeking to embarrass the more ordinary path of her labours, she at once displays her pride and strength in the number and variety of her resources, and in the extent and importance of their applications; while the professor of our art is thus enabled to support additional claims upon the respect of the learned, the confidence of the oppressed, and the gratitude of the public. In the active exercise of his duties as a medical jurist, how exalted and honourable is the occupation of the physician! There is scarcely a circle of natural science, upon the boundaries of which he does not infringe in some point or other of his extensive orbit. Trace his progress, for instance, through the subject of poisons, and we shall soon perceive that it involves within its range the departments of anatomy, physiology, botany, mineralogy, zoology, and chemistry. If, again, we follow his steps through the deviating and perplexing course of homicide, in how many new and interesting forms will the principles of physiology present themselves; how frequently shall we find ourselves engaged in the solution of problems, connected with the knowledge of pneumatics, hydrostatics, and mechanics. If we attend him in the investigation of nuisances, as affecting the health and comfort of the surrounding inhabitants, we shall perceive that an acquaintance with the various branches of natural philosophy can alone enable him to appreciate the nature and extent of the evil, or the value of the different plans that may be proposed for its removal; while the intricate and perplexing subjects of quarantine and plague-police will require for their elucidation, the energies of a peculiarly constructed and well-disciplined mind, to concentrate the genuine lights into a focus, and to dissipate the many specious but false appearances with which the question of contagion has been distorted."

As the history of, and steps of procedure in, a single case, bearing on some of the branches of medical jurisprudence, will frequently convey, on those points on which it impinges, as much information as the most luminous disquisition, for the reason so justly advanced by Quintilian, "In omnibus fere minus valent præcepta quam exempla," I beg to send you the particulars of an instance which occurred in my neighbourhood, with some observations. The procurator-fiscal of the county, who supplies the place of Coroner in Scotland, having obtained information, that one Margaret Patterson, residing in Ceres, a neighbouring village, had been delivered of a natural child; that the child was dead, but that, from certain circumstances connected with the mother, and the singular manner in which it was found, together with some very suspicious marks on the child itself, it was inferred that violence had been applied to it; presented a petition to the Sheriff, craving, that two medical men should be appointed to inspect the body, and give in their report, which was accordingly granted, Dr Grace and myself being nominated for that purpose.

In compliance with the order, we proceeded to the village in question on the forenoon of same day, 6th October 1825, and learned that Margaret Patterson had been delivered of a natural female child about two o'clock on the preceding afternoon; that she had no one in attendance; and that the child was found dead by the neighbours under very suspicious circumstances, which will be afterwards detailed.

The child was shown to us lying on a table, wrapped up in a shawl or handkerchief, in the same room with the mother, which, from the smallness of the place, afforded no other arrangement. We caused it to be removed to a neighbouring house, in order that our inspection might go on uninterrupted, and also that the feelings of the mother might not be harassed by witnessing the dissection of her child. We did not disturb her with unnecessary questions, considering that, in the event of violence being applied, it was only subjecting her to the necessity of inventing some story which would be more likely to be false than true. We simply ascertained that she was recently delivered; that she laboured under no particular uneasiness; and that the pulse was natural. *

Dissection.—We shall, in the first place, simply narrate the appearances as they presented themselves externally, and on dissection, in order that the relation may be clear and unhampered by reasoning or remark, and afterwards we shall review these appearances, and apply to them the doctrines of physiology and pathology.

External appearances.—Placed on a table, and carefully surveyed, the child appeared to be full grown, well-proportioned, and perfectly free from putrescence or disease, and what people, in common language, would call, a fair, fat, or well-conditioned child. It weighed 6 pounds 2 ounces avoirdupois, or imperial weight, and measured 19 inches in length, the navel forming nearly the centre of its length. The umbilical cord attached to the child, from the raggedness of its end, appeared to be torn or lacerated, was 18 inches in length, and untied, unless a few slender threads of yarn loosely thrown round it might be considered as an abortive attempt, but which, however, was displaced by the slightest touch. The chest had a full and arched form; the face slightly livid, mouth open, with a little protrusion of tongue, eyes somewhat turgid. Above the ears, occupying the right and left parietal regions, but chiefly the right, a fulness apparent to the eye, and softness to the touch, was observed, very slightly livid, but no injury of the integuments. On examining the neck, we observed a permanent deep indentation, encircling it in its lower third, accompanied all around to nearly the extent of an inch, with a florid or rose-red discoloration, but more remarkable and diffused over the trachea. On each side of the thyroid cartilage there were similar discoloured marks, with abrasion of the cuticle.

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* See Observations at the end of the Paper.

Internal appearances.—The dissection was commenced, by making an incision through the integuments from the symphysis menti to the top of the sternum. Another incision was carried along the margin of the base of the inferior maxilla, and the angle of integuments thus formed, with the fibres of the platysma myoides, was dissected back as far as the middle of the clavicle. Under the discoloured marks, formerly mentioned, on each side of the thyroid cartilage, the injection of the capillaries, with infiltration of blood and dark fluid serum into the cellular membrane, was more apparent than externally. The same also was very remarkable under the circular indentation, and more particularly so over the cartilages of the trachea, which appeared to be compressed and injured. An incision was then made into the pharynx, and the larynx, trachea, and œsophagus dissected back. Under the compressed cartilages of the trachea, and behind the œsophagus, a deep bloody infiltration with serum was present in the cellular membrane, covering the bodies of the cervical vertebræ. The incision was then continued from the top of the sternum to the ensiform cartilage, the integuments, with the pectoral muscles, dissected back, and the cartilages of the ribs divided with a pair of scissors. The lungs appeared to be fully and permanently dilated, occupying to their full extent both cavities of the chest; were of a pale reddish colour, quite healthy, and covered completely the lateral parts of the pericardium and heart. The large blood-vessels at the roots of the lungs, the ramifications of the pulmonary artery, were filled with dark-coloured blood. The two venæ cavæ, with the descending thoracic aorta being tied, the lungs and heart were removed, and placed in a large bason containing river-water, at the ordinary temperature of the air. They floated, two-thirds of their surface being above water, and, when pressed to the bottom, instantly returned. This was frequently repeated. They were afterwards cut into, when a crepitus, with arterial hemorrhage was perceived, and when compressed, there issued forth a white frothy mucus. The ductus arteriosus was next examined, and found empty and collapsed, but pervious; the foramen ovale was open; the venæ cavæ and right auricle contained blood; there was also some in the left auricle. The heart being removed, the lungs weighed two ounces. They were afterwards cut into quarters, and strongly pressed, when they still continued to float, this operation producing no difference in any respect.

The incision was afterwards continued from the ensiform cartilage to the anterior and superior spinous processes of the ilia. The stomach and whole intestinal canal, with the other viscera of the abdomen, appeared to be quite healthy; the urinary and gall bladders empty; the colon and rectum almost filled with meconium. The ductus venosus in the liver was examined, and found empty and collapsed, but pervious; the liver, however, was not weighed.

The head was next examined, by making one incision across from one ear to the other, and another from the frontal to the occipital bones. Under the integuments above both ears, but chiefly the right, large coagula of blood, nearly an inch in thickness, occupying the whole extent of both parietal bones, were discovered; the pericranium was very vascular and covered with blood, and separated from the bones beneath; the parietal bones themselves fractured, the right into five pieces, with smaller splinters, and the left into three; the bones were easily lifted out, scarcely adhering to the pericranium or dura mater. They were removed, and the scissors employed for cutting through the remaining membranes. The surface of the brain appeared so vascular, and so covered with extravasated or coagulated blood, that it was difficult to conduct its dissection; it looked, in short, as if blood had recently been poured over it, had diffused itself all around, and afterwards gathered itself into the base, to the extent of several ounces, where it was coagulated. The vessels of the pia mater were most deeply injected, and a quantity of coagulated blood was contained in the ventricles. The shawl in which the child was wrapped was next examined, when an evident discharge of meconium was discovered on it. We obtained also the placenta, and found the umbilical cord attached to it to be six inches in length; which, with the eighteen inches of it adherent to the child, made its whole length to be two feet.

We come now to review this dissection, which we shall endeavour to do in as short a manner as possible, and will begin by observing, that we consider the duty of every medical jurist to consist in ascertaining whether the child be born alive, and whether its death can be explained from the operation of natural or internal causes, or be the result of violence or of external causes.

The external appearances were evidently those of a healthy child recently dead. Its weight and length would indicate that it had arrived at maturity; for, according to Dr Joseph Clark's inquiries, the average weight of both sexes is about seven pounds, but more males than females are above that standard, and more females than males below it. This was a female, and below the standard. Hutchison says, that the length is generally from nineteen to twenty-two inches, and that seventeen and twenty-six will include the two extremes; this, therefore, being nineteen inches, was of an ordinary length. Capuron makes some useful remarks on the difference between the superior and inferior extremities, in regard to length, at the different stages of gestation, and states that, at the full period, the navel will very nearly form the centre of length. This also accorded; the navel in this child being nearly the centre of length. The arched form of its chest indicated to the eye that the lungs were dilated, because, in those who have not breathed, from their condensed state, and the small proportion of room which they occupy in the top of the chest, the breast is necessarily flattened and compressed.

The deep indentation round the neck, with its accompanying discoloration, was a remarkable circumstance, and appeared to us to be the effect of a ligature of the size of whip-cord firmly applied around it, and thus producing strangulation. That it must have been very tight, was evident from the injured state of the cartilages of the trachea, and the impression made through the œsophagus on the cellular membrane, covering the bodies of the cervical vertebræ. Strangulation would also account for the lividity of face, turgidness of the eyes, and protrusion of the tongue. The discoloured marks, with abrasion of the cuticle on each side of the thyroid cartilage, seemed to us to correspond with forcible compression by the fingers and thumb in a previous attempt at suffocation.

The appearance of the lungs, their healthiness, their full and permanent dilatation, the turgid state of the large blood-vessels at their roots, with the empty and collapsed condition of the ductus arteriosus, together with the result of the hydrostatic test and other experiments, convinced us that the function of respiration had been fully established.

There are numerous objections urged against the hydrostatic test; but the most considerable are, putrefaction, artificial inflation, and the circumstance that the child may occasionally breathe, on the head being protruded from the mother, and die in this untoward situation before the body be delivered.

Putrefaction, in our opinion, does not present so much difficulty as many are desirous to inculcate, because it appears to be established, from numerous observations, that the lungs, with the exception of the bones, resist the putrefactive process longer, or at least not less long than any other part of the body; therefore, if it be present in the lungs, it must have acted previously, or at least at the same time, on other parts, which will be apparent to the senses of sight, smell, and touch ; but, if the whole body be fresh and sound, we infer that the lungs are fresh also, and the objection thus falls to the ground. It can only hold good where the child has been a considerable time dead, or has been found in water, in a privy, or buried in the ground, when every test becomes clouded with obscurity.

It is not impossible that artificial inflation may be practised by the wicked and designing, for the base purpose of criminating an innocent woman—or that a tender mother may endeavour to resuscitate an inanimate child ; but this, as stated by authors, would appear to be a much more difficult business than, at first sight, one would imagine. Besides, the lungs are never fully inflated in this manner, the blood-vessels at their roots are not filled, and it is stated that the air may be almost wholly squeezed out of such lungs.*

The circumstance of the child occasionally breathing, when its head is protruded from the mother, appears to us to be an objection of the greatest weight of any, as this very lately occurred in our own practice; and we find, on inquiry amongst our brethren who practise much in midwifery, that it is not very unusual. The woman to whom we allude was healthy, stout, and well-formed, with plenty of room in the pelvis, and when the head of the child was protruded, it instantly cried, and made so much noise as to arrest the attention of all the attendants. It was several minutes before the child was born—no unnecessary haste being resorted to on account of this occurrence, nor any attempt made to prevent the breathing or crying of the child, as we understand is done and recommended by some, but which we would consider a very dangerous practice ; because, the very fact of the child breathing in this premature way, would argue that its life was in jeopardy, either from the umbilical cord being pressed on, the placenta having separated, or some other circumstance cutting off the circulation between the mother and child ; and that, therefore, there exists a necessity for the vicarious function of respiration being immediately performed.

It may be stated in answer to this, that there is little likelihood of the child dying in this situation, because it infers on the part of the child an unusual vigour, and on the part of the mother an increased degree of capaciousness, and is, besides, rarely, or scarce at all, mentioned by authors ; but, as the thing is not impossible, and as it has actually happened in the practice of Dr Hossack of New York, so it may possibly happen again; and although we can scarcely suppose the lungs to be fully and permanently inflated in this manner, as the cry is rather of a suppressed or suffocated nature, yet it is at least a powerful argument in favour of the accused, and we do not well see at present how its force is to be eluded.

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* See Observations at the end of the Paper.

The static test, or that proposed by Plouquet, is founded on the facts, that only a small proportion of the blood in the fœtus is circulated through the lungs by the pulmonary artery, and apparently for the simple purpose of keeping it and its numerous ramifications pervious, and that the parenchyma, or substance of the lungs, is nourished and supported from small arteries arising from the thoracic aorta, named bronchial by Haller, but that, after respiration has commenced, the whole of the blood passes through these organs. This test is, therefore, I think, of considerable value, because it is evident that their weight must be considerably increased after respiration. Plouquet makes the increase to be nearly double; others, however, particularly Schmidt at Vienna, and Chaussier at Paris, from their experiments instituted for the express purpose, have not confirmed this to the same extent, but still agree that there is a difference; Schmidt's mean proportion being 1 to 42 in those who had respired, and 1 to 52 in those who had not. Chaussier's mean proportion is 1 to 39 in those who had respired, and 1 to 49 in those who had not. This case was 1 to 49, rather agreeing in this respect with the subsequent experiments of Hartmann, who makes the proportion to be 1 to 59 in those who have not breathed, and 1 to 48 in those who have, which nearly agrees with this case.

In the abdomen, the chief circumstance worthy of remark was the empty state of the gall and urinary bladders, which in the fœtus are generally allowed to contain bile and urine; their emptiness, therefore, could only be accounted for on the supposition of these organs having contracted on their contents, from the descent of the diaphragm diminishing the cavity of the abdomen, and having expelled them, and that the child had, therefore, lived some little time after delivery—but we do not greatly insist upon this, as it is possible there may be some fallacy in it. The meconium found on the shawl would appear to establish that this evacuation had, at least, taken place. The liver was not weighed as recommended by Dr Beck, because a number of experiments would require to be instituted on that head before we could come to any satisfactory conclusion; it would certainly tend, however, to corroborate the test of Plouquet.

The appearances on the dissection of the scalp, the firm coagula of blood, the fractured and splintered state of the bones, the separation of the pericranium and dura mater, which, in the child, are known to adhere to the bones with great pertinacity, and the vascular and bloody condition of the cerebrum, could not, we believe, be explained on any other supposition than that of a very considerable degree of violence having been applied.* We imagined, indeed, that she had either forced and crushed the head of the child against the sides of the wooden bed in which she lay, pressed on it with her knees, or struck it with her fist, or some other blunt instrument.

From the foregoing statement and explanation, we think that our professional brethren will have little difficulty in imagining that we were brought to the belief that the child was born alive, and that it came by its death from violence; and we drew up our report accordingly, divested, of course, of all reasoning and technical phraseology, and, in short, conceived in such simple common language as to be intelligible to all. A warrant was in consequence issued for her apprehension, but, from her recent delivery, and the weak and dejected state in which she was, we again had occasion to give our opinion, that it would be unsafe to remove her so far immediately; she got leave, therefore, to remain where she was for ten or twelve days, a watch, at the same time, being set over her. In the interim, however, she contrived to make her escape, but, after some time, was again discovered, and brought to prison, where she remained until the Perth circuit, or assizes, which took place on the 20th of April last.

We think it necessary, in this place, in order to render the history more connected and complete, to give a very condensed outline of the circumstantial evidence adduced by the Sheriff and procurator-fiscal—but premising, at the same time, that this evidence was carefully withheld from us until the trial was over, as if it were established that we have nothing to do with the evidence of others, but have to form our opinion merely from the appearances unfolded by external and internal examination. We need not mention the names of the several witnesses examined, as all their accounts run nearly to the following tenor: That they suspected, for several months before her delivery, that Margaret Patterson was with child—that she had all the appearances of it—that the question was frequently put to her, and that she obstinately denied it—that some of them were apprehensive she intended some mischief to the child, and spoke of this to her relations—that on the day in which she took ill and went to bed, they were persuaded it was for the purpose of lying-in—that they called and mentioned this to her, when she said she had only a headach, and that there was no child about her—that, by this time, from certain suspicious appearances, they suspected she had actually been delivered of a child, and desired to know where it was—that she still continued to deny it and assert her innocence—and at last, from her pertinacity in refusing them their wished-for satisfaction, they insisted on searching the bed, which, though obstinately opposed by her, they finally carried into effect, when the child was found secreted under the chaff-bed on which she lay.

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* See Observations at the end of the Paper.

This discovery rendered it impossible for her to resist the force of such evidence any longer, when she made a full confession of the whole story ; but stated, in extenuation of her conduct, as an apology for the long pretended concealment of pregnancy, that she did not find herself in the same way, or that her feelings were different to what they were sixteen years ago, at which period she had a natural son ; that from the uncertainty of her situation when she took ill, she did not send for medical assistance, or call in the aid of her neighbours, which she had an opportunity of doing, as her son, with a stranger, was sitting in the house at the time ; that for the same reason she had provided no clothing ; that she made no noise, and was delivered in the meantime ; but she denied firmly having used or contemplated any violence to her child, and accounted for its death from the circumstance of the umbilical cord being several times twisted round its neck ; asserted that it never cried, or was heard to breathe ; and that, considering it dead, she did not think it worth while to tie the cord, but admitted, that, in a living child, she knew this operation to be necessary,—but she could give no explanation for her conduct subsequent to delivery.

We shall not waste time in refuting this statement. It is apparent that it accounts in no manner for the violence applied to the head. She was in bed at the time, and, from her making no noise, her delivery would appear to have been easy, so that neither the fall of the child on the ground, from her being rapidly overtaken with the pains of child-birth, nor compression of its head from a slow protracted delivery through a narrow pelvis, can be pled as an apology. The deep narrow indentation round the neck, apparently the result of the application of a ligature of the size of whip-cord, could not be produced by the twisting of the umbilical cord several times around it, because the lubricity and size of it, when the circulation is continuing, and the umbilical vein and two arteries consequently full, with the gelatinous effusion in the cellular membrane around them, render it so large and soft as to be unable to make any impression on the neck, especially to the extent of marking and discolouring the skin, and denuding the cuticle. Besides, the lungs, in that case, the breathing being prevented, would not be inflated.*

When brought to trial, therefore, there appeared such a force of substantial and circumstantial evidence against this woman, that it was difficult to conceive in what manner she could set up any tolerable kind of defence, or evade the vindictive grasp of the law; but this, however, was accomplished. Her legal advisers, knowing the weakness of her cause, and the stubbornness of the facts, persuaded her to plead guilty to what they call the minor offence, which is, concealment of pregnancy, and stated that, by so doing, there was every likelihood that the public prosecutor would abandon the greater charge, or murder of the child,—and which, on her intention to this effect being communicated to him, was accordingly done.

We do not pretend to penetrate the reason which induced the public prosecutor to abandon the capital charge, unless from the known uncertainty and insufficiency of medical testimony in the generality of cases of infanticide; nor indeed would we choose to cavil with this benevolent interpretation of the law, because there is no doubt, that, on many occasions, its judicious exercise is exceedingly just and praiseworthy, where mere rumour, and the suspicion of an ignorant credulous multitude, ever fond of the marvellous, attaches guilt to an unfortunate and unoffending female. But if ever medical testimony shall be allowed to have any weight in a case of this nature,—or if ever a woman shall be punished capitally for infanticide, which we very much doubt from the prevailing feeling of the law in regard to medical evidence,—we think that this was certainly a case as strongly made out as it is almost possible to conceive. For, on reviewing the outlines, it is evident that, in the first place, there was, on the part of the individual, long premeditated intent; and, in the second, that she had made several and repeated trials to destroy her child;—first, in our opinion, besides the omission of tying the cord, by an attempt at suffocation, by means of the fingers and thumb; then by injury of the head by pressure, or blows with a blunt instrument; and finally, by strangulation by means of a tight ligature. We may account for the failure of the first of these attempts, from the hurry and trepidation in which the woman may be supposed to be in, and from the tenacity of life with which children are known to be sometimes endowed.

We have also since learned, that, had even the public prosecutor insisted on the capital charge, and the trial in consequence gone on, the plea of insanity would have been urged by her counsel:—not that the woman laboured under any previous symptoms of insanity, but because the act argues such a want of the common feelings of human nature,—is so manifestly destructive of that strong maternal tie which connects a parent with its progeny, conspicuous even amongst the most rapacious of the lower animals,—and is besides so peculiarly repugnant to the female breast, whose deep-rooted affection for their offspring, even though the fruit of illicit commerce, is quoted as proverbial in Holy Writ, that a person guilty of so unnatural a crime cannot be otherwise interpreted than in a state of temporary insanity. We know not what weight may be attached to this argument; but we think that, on many occasions, it is as good as the plea advanced for the suicide, who, apparently to others in sound health and mind, puts a period to his existence. The exciting cause in both appears to be the same. The suicide conceives, whether imaginary or real, that he sees such a load of evil or disgrace about to fall upon him, that he shrinks from its approach, and, knowing the frailty of his nature, considers it wiser to terminate his being, than withstand the scoff and scorn of a taunting world. A delicate female, knowing the value of a chaste reputation, and the infamy and disgrace attendant upon the loss of that indispensable character, and aware of the proverbial uncharitableness of her own sex, resolves in her distraction, rather than encounter the indifference of the world, and banishment from society, to sacrifice what, on more fortunate occasions, it would have been her pride to cherish.

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* See Observations at the end of the Paper.

However dangerous or even false this doctrine may be, we know, that, in the hands of a subtle and able advocate, it would be the means of making a powerful impression upon the minds of a feeling and even intelligent jury.

Cupar Fife, 27th April 1826.

ART. XIII.—*Observations on the preceding Case, addressed to the Editor.* By ROBERT CHRISTISON, M. D. Professor of Medical Jurisprudence in the University of Edinburgh.

I AM much indebted to you for the perusal of Dr Scott's paper, and willingly avail myself of his permission to annex a few observations that have occurred to me on reading it. The case is, so far as I know, the first of the kind in Britain, of which the reporters have had the courage and public spirit to publish all the details. The inspection is nearly, if not altogether, complete in its details,—an observation which can very seldom be made of the medico-legal dissections conducted in this country. The inferences the author has drawn from the facts also appear to be, for the most part, correct. But he has omitted some fallacies in the way of their deduction, which, as he has very properly related the case with a direct view and frequent reference to the principles of medical jurisprudence, it may be right to supply.

In relating the fallacies which render the hydrostatic test equivocal evidence of the child having survived birth, Dr Scott observes, "it is stated," that, when the lungs have been distended by artificial respiration, the air may be squeezed out of them, so as to make them sink; but he does not mention any authority for the statement. Professor Foderé of Strasburg has given a conjecture to this effect; [*] Wildberg has affirmed the same thing in distinct terms, but without alleging that he had ascertained it by experiment; [†] and I have not hitherto met with any fact either related or referred to in proof of their opinion. On the contrary, the two following authors, whose authority on the subject is undisputed, distinctly affirm, that the lungs cannot be made to sink by expressing the air. Professor Mendel of Breslau twice met with the case of a still-born child, in which artificial breathing was used; and the lungs swam even with the heart attached, and likewise when cut in pieces and carefully compressed. [‡] In a work published very recently in Germany, and consisting of cases and experiments by Professor Bernt of Vienna, several facts of the same nature have been mentioned. In three cases of still-born children, after artificial inflation, "the lungs united with the heart; separated from it; divided into lobes and segments; nay, even also when squeezed, floated on the surface of the water." [§]

The objection arising from the possibility of artificial inflation of the lungs, is, therefore, rather more weighty than Dr Scott seems willing to allow. At the same time it should be remembered, that it is at all times difficult to inflate the lungs without a proper apparatus; that it must be still more so to a woman newly delivered; that, when it is done, there is little likelihood of the case leading to a criminal prosecution; and that the fallacy arising from it may be lessened, or perhaps removed, by attending to the weight of the lungs, their colour, and the presence or absence of blood in them.

Besides putrefaction, artificial inflation, and uterine or vaginal respiration, there is a fourth fallacy which has been omitted by Dr Scott. It was first distinctly stated by Professor Chaussier of Paris. * It is a sort of spurious emphysema of the lungs, caused in cases of tedious labour, and particularly in cases of delivery by the feet, when the child dies in the passages. Chaussier remarks, that he has seen the lungs in such cases float, although they certainly were not putrid, and had not been dilated by breathing in the passages; but he adds, that, like the fallacy arising from putrefaction, this one may be obviated by compressing the air out of the lungs.

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[*] Traité de Méd. Lég. iv. 482.

[†] Decisiones medico-legales de Infantibus neogenitis, 110.

[‡] Beiträge zur Würdigung der Lungenprobe, in Hufelands Journal der Practischen Heilkunde. Aug. 1812, pp. 71, and 73.

[§] Experimentorum Docimatiam Pulmonum Hydrostaticam illustrantium Centuria. Sect. I. Exp. 8. Sect. III. Exp. 58, and 59.

I do not think it possible for a medical person to draw any other conclusion from the facts of this case, than that which has been drawn by the author, viz. that the child died a violent death after birth. The congestion in the cuticular capillaries on each side of the mark round the neck, and the great infiltration of bloody fluid in the cellular tissue beneath, show that the strangulation must have taken place during life; the abrasion of the cuticle, and the depth of the indentation, form pretty satisfactory evidence that it could not have been made by the umbilical cord, even although the prisoner had not removed all doubt, on this subject, by alleging that the cord was twisted *several times* round the neck; and the severe injuries found on both parietal bones, which it is well known may be caused during labour, by pressure of the surrounding parts on the head, could not have arisen from such a cause in this case,—as a labour of the kind alluded to is incompatible with secret delivery, particularly under the circumstances in which this woman was delivered,—and as it appears probable from what Dr Scott says, (although he is not altogether explicit on the subject) that she was well formed for natural and easy labour.

The want of clots of blood under the mark of the strangulation is rather uncommon, considering the tightness with which the ligature must have been drawn; and in other circumstances might lead to the inference that the injury of the neck was caused after death. I do not mean that clots of blood are always found under the mark of the ligature in cases of death by strangling. Very far from it: I have never found any effusion of coagulated blood in the neck of criminals who have been hanged. But I apprehend a ligature could hardly be drawn so tight round the neck, as seems to have been done in Dr Scott's case, without rupturing some vessels, and thus causing extravasation of blood, unless the person was near death, and the action of the heart very feeble. In the present instance, the congestion, without extravasation of proper blood, would be intelligible, if, as Dr Scott very properly conjectures, the child was previously very nearly killed by the injuries of the head.

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* Considérations Medico-légales sur l'Infanticide par A. Lecieux, p. 55.

Taking the facts of the case according to the author's showing, I repeat, that I cannot see any good reason for doubting that the child was killed by violent means intentionally applied; and the restricting of the libel is unintelligible except on the supposition that the moral evidence was incomplete, or that it was restricted under a belief, which, from the repeated occurrence of such cases, I cannot help thinking is sometimes entertained in the present day,—that the killing of a new-born child, when perpetrated under the impulse of injured honour and the fear of disgrace, should not be classed with the other varieties of murder.

In conclusion let me remark, that Dr Scott has conferred a great obligation on the medical jurist by publishing this interesting and valuable case; and he will have conferred a still greater one, if his conduct shall encourage his brethren to follow his example, by also giving to the public the results of their medico-legal practice.

ART. XIV.—*Case of Obstruction to the passage of the Blood through the right Auriculo-Ventricular opening of the Heart, from a Fibrinous Concretion which was entangled under the tendinous Cords of the Tricuspid Valve.* By HENRY VERNON, M. D. Extraordinary Member of the Royal Physical Society, Edinburgh, Member of the Royal College of Surgeons, London.

ON the 29th of March last, I was requested to visit in haste William Massey, 26 years of age, residing at two miles distance, having been suddenly seized, as the messenger informed me, with a violent pain in his head and loins, whilst engaged at his work in a spinning factory.

On entering the house, I observed him sitting on a chair before the fire, in a very stiff, constrained attitude; his hands were forcibly pressed against his temples, and at intervals corresponding with each systole of the ventricles, he clenched them in agony at the repercussions of pain which that alternate movement of the heart caused in his head.

His countenance was of a pale, leaden hue, with a remarkable turgescence of the subcutaneous veins of the forehead, face, and neck. It resembled much that of a person in an epileptic fit, the similitude being heightened by a spasmodic rigidity affecting the muscles of the jaw, accompanied with a large quantity of frothy saliva which foamed over the lips. He had become very deaf since the attack, but gave very correct answers to all questions that were put to him, though in a hurried, irritable manner.

On making inquiries of those present respecting the circumstances preceding the attack, and those also under which he was seized, they informed me, that he had been early that morning to see his wife and family, who were settled three miles from the mill in which he worked; that he had returned very much fatigued and overheated, having run back the whole of the way over a very rough and mountainous part of the country; that he then eat his dinner as usual, and afterwards went to the mill, where, whilst engaged at his work, he gave a violent scream, in consequence of an acute pain which had darted into his head and loins. He walked to the house he lodged at, a distance of a quarter of a mile, supported by two men, and soon after arriving there vomited about a gill of black grumous blood, mixed with portions of food he had eaten at dinner.

From his appearance, and the history of his seizure, being forcibly impressed with a preconception of some sudden and serious obstruction having taken place to the arrival of the blood to the lungs, my curiosity was immediately directed to the state of the heart, and in laying bare his breast, the bystanders immediately uttered an exclamation of surprise at the violent and tumultuous movements of that organ against the ribs, and more particularly under the sternum. On applying my hand over it, the jarring sensation it imparted was very remarkable. The carotid arteries shared in this turbulent action, but the pulsation of the radial arteries at the wrist was small, thready, and regular, and averaged about 95 beats in a minute.

I ordered him to be put to bed immediately, and he experienced very evident relief from the change to an horizontal position, the violence in the action of the heart being much subdued. I drew about twelve ounces of blood from the jugular veins and temporal artery, and having directed that his feet should have hot fomentations frequently applied to them, and his head enveloped in cold wet cloths, I left him.

The next day he appeared to be in nearly the same state. He had passed a very restless, tossing night, with transient fits of delirium, which seemed to be accounted for from his mind being completely worn down with continued agony and watchfulness. His bowels had acted briskly from the effect of some saline aperient medicine he had taken, and the secretions into them were healthy and natural. He continued in this state of suffering, totally without sleep, until the third of April, when his breathing, which had hitherto been tolerably calm and easy, became suddenly very much oppressed, and he died in great agony in the course of an hour afterwards.

Being very desirous to ascertain the precise cause of this confusion in the action of the heart, I obtained permission, though with great difficulty, to make a *post mortem* examination.

He was a fine, athletic subject. The pectoral muscles, on being exposed, were beautifully prominent, and of a high red colour. The lungs were sound and crepitous throughout, had contracted no adhesions, and were by no means gorged with blood; the pericardium contained about two ounces of reddish serum. On looking at the heart *in situ*, I was immediately struck with the large and bag-like appearance of the right sinus venosus. Having detached it, I proceeded to lay open its cavities, beginning with the right sinus venosus, upon which a large quantity of fluid blood flowed out, and left exposed, extending in an oblique direction from the auriculo-ventricular opening into the sinus venosus, a clear, yellowish, fatty-looking substance, about as thick and long as the little finger. Before endeavouring to pull it away, I fairly exposed the right auriculo-ventricular opening, and I found that it had formed no adhesions to the sides of the auricle, but that it was merely bound down under the tendinous cords of the tricuspid valve, from which I succeeded in drawing it away entire, with a tolerably gentle effort. On pressing the substance between my fingers, it was thick, elastic, and membranous, and had rolled itself up into a vermicular form. It was, in fact, perfect fibrine, with scarcely a streak of red blood in it. When immersed in hot water, it shrivelled up into a tough leather-like substance. The parietes of the right auricle were become extremely thin, the musculi pectinati being separated by very long intervals, and appearing to be connected only by a very fine transparent membrane. The rest of the heart was of its natural size and thickness.

Though many anatomists, and amongst them Morgagni, have doubted whether formations of this nature are ever deposited, excepting in the last moments of life, and in the agonies of death, I think the foregoing ease proves the correctness of the opinion of Corvisart and Laennec, that such concretions may and often do constitute a cause of death, and may have been separated from the blood in the full health and vigour of the subject of them. Indeed, it is not impossible, that, in the case just described, this fibrinous substance may have floated about in the auricle for a length of time, without producing any confusion in the action of the heart; that it was at length carried by the current of blood to the auriculo-ventricular opening, and, by plugging up that passage, immediately induced that fatal train of symptoms, which such a serious impediment to the motion of the blood through the heart would naturally occasion.

Bury, Lancashire, 12*th April* 1826.

ART. XV.—*A Letter to the Editor of the Edinburgh Medical and Surgical Journal, occasioned by the Remarks on Surgical Apprenticeships, in the last number of that work.* By WILLIAM BROWN, Fellow of the Royal College of Surgeons Edinburgh.

SIR,

I PERUSED with deep interest the able article on the English Apothecaries' Act in the last number of your valuable Journal. The subject is one to which my attention was directed several years ago, and I have never ceased to view it as one of vast importance to the respectability of the profession, and the well-being of the nation generally. The act of 1815 conferred a monopoly of the most exclusive kind on a body of men, who had given the legislature no ground to believe in their qualifications for possessing it, and who have certainly since then shown no unwillingness to enforce its penal enactments. It has often been regretted, that a subject which bore so directly on the medical art, which was so injurious to England, and so galling to Scotland, should have excited so little interest in the medical world. Its restrictions were lamented, but they were considered incurable evils; and no attempt was made to procure the introduction of a better system till last year, when, the Society of Apothecaries having, by means of Mr Brougham, brought into the House of Commons a bill to strengthen and support their monopoly, the Royal College of Surgeons of Edinburgh came forward and opposed them. Their efforts were successful to the extent of limiting the endurance of the act to one year, but still more so by stirring up the dormant feeling of the professional public, and thus exciting an almost unanimous opposition, which we are confident will never cease till the baneful monopoly be abandoned.

You, Sir, have at length come forward in the cause, and your manly statement will be read with attention and conviction by your numerous readers. Your exposure of the evils of the monopoly, as forcing upon the community practitioners imperfectly qualified, and excluding from the field those who are their superiors in every thing, is very satisfactory, and will I trust convince any who may yet be in doubt.* But I cannot conceive why, in the discussion of a question on which unanimity is so desirable, you should have thrown in the ball of contention, by introducing a subject upon which there is a difference of opinion, but on which the large majority entertain sentiments widely different from yours. You understand me to refer to the subject of Surgical Apprenticeships. I do not deprecate the investigation of these institutions: discussion of a disputed subject is always useful, because during the discussion truth is sure to be elicited: but I blame the introduction of the subject at a time, and in a place, where it was on every account to be avoided. I ask, *cui bono?* for what purpose was the question introduced? You were showing the evils of the English Apothecaries' act, and among these, a compulsory and servile apprenticeship for five years; What had this to do with apprenticeships in general, or with those of Edinburgh particularly? Had these strictures been addressed to the profession alone, I should hardly have thought it necessary to have taken further notice of them, as *they* are well aware of the true state of matters; but the reviewer evidently anticipates the perusal of his remarks by others, and has probably taken steps to bring them before extra-professional readers. This renders necessary the following statement; and if I shall not be able to convince, I trust I shall not offend you by any want of courtesy, or by any unfairness in the argument. Were the surgeons of Edinburgh to remain silent under these circumstances, it would naturally be inferred, that they acquiesce in the view of apprenticeships given by the reviewer; and if that be correct, they are acting a criminal part in retaining a single young man under their care; they are retarding his education, teaching him idle habits, and preparing him for a rejection at Surgeons' Hall, or for a diploma given with a grudge after an appearance "under par."

I shall examine the subject of apprenticeships, first as they affect the acquisition of knowledge; and, secondly as they influence the moral habits.

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* I wish the reviewer had shown less partiality for one class of the profession,—the Edinburgh graduates. This was perhaps natural. But in mentioning the course of education required by the College of Surgeons, he ought to have been candid, and not have omitted Practical Anatomy, which is imperative in their course, and merely optional in the other.—Mr Brown.

[The omission of Practical Anatomy, as imperative in the course of studies, prescribed by the Royal College of Surgeons of Edinburgh, to students presenting themselves for examination, was a clerical error, which was not discovered until after the number of the Journal was published, and which it was our intention, before the receipt of Mr Brown's letter, to have corrected in the present number.]—Editor.

Before doing so, however, I must refer to an assertion by the reviewer, which, if true, is a very important argument in his favour. He says, page 414, " That such is the case," viz. that Edinburgh apprenticeships do not answer their purpose, " is shown by a fact, which can be proved by individuals of the highest authority,—namely, that apprentices, when they enter on their trials, are found not to be on a par with those who have studied under proper directors, without serving an apprenticeship." This assertion I contradict in the most unhesitating manner. It is not true. I do not know to whom the reviewer may allude as persons of the highest authority; but I can say, that I have asked, and obtained the opinion of many individuals, who are examinators now, or have been so formerly, and who unanimously declare, that the statement is entirely incorrect. Apprentices appear at Surgeons' Hall who are found deficient in qualifications, and are of course remitted to their studies, and others receive a diploma without having made a first-rate appearance; but it is denied that apprentices in general make a worse appearance than others, and a great many of them do full credit to the care and instructions of their masters. I can give the reviewer the names of individuals who will declare this;—individuals whom he must concede to be of the highest authority in such a question.

With reference to the acquisition of knowledge, it cannot be denied, that, in some cases, apprenticeships are injurious. When, as is compulsory in England, a young man spends five years in an apothecary's shop of a country village, before he is permitted to attend lectures in a medical school, a great part of his time must be lost, so far as his own improvement is concerned. He, of course, learns the preparation and the sale of drugs, and he acquires some acquaintance with diseases, and the method of curing them. But he must, in a great majority of instances, be ignorant of anatomy, that foundation of all the medical sciences, and he can also know little respecting the scientific principles of the pharmaceutical processes which he witnesses, and of the diseases which he attempts to cure.

When the master permits his apprentice to spend the winters of his term at a medical school, the evil is very much mitigated, and a young man, in such circumstances, possesses good opportunities of acquiring both the theory and the practice of his profession. When the distance is very great, this cannot well be done, and then the apprentice is obliged to stay with his master till his apprenticeship be expired, and then go to hear lectures, and endeavour to hear as many in as short a time as possible.

To apprenticeships in Edinburgh this objection cannot apply. I never heard of a master belonging to the College of Surgeons who made his own business hinder his apprentice from attending the classes. Were he selfish enough to entertain the proposal, the number of classes, and the variety of lecturers on all branches, make it, in general, an easy matter for the apprentice to carry on his course of study without interruption. I can easily suppose, that where there is a great deal of work to be done, and perhaps only one to do it, the time for attending lectures, and for study, must be considerably abridged; this, however, is a rare coincidence. It was formerly, I believe, customary for apprentices to be employed in many duties which we now consider as menial and servile. Under this regime a good deal of their time must have been misapplied, and it cannot be doubted that their sense of self-respect must have been lowered to an injurious degree. But these days are past, and if the reviewer remembers them, he is not justified in charging, upon the surgeons of the present day, the narrow prejudices or illiberal customs of their predecessors.

It is still, perhaps, the opinion of some masters, as it is, I know, of not a few students, that the great object of an apprentice in coming under an indenture, is to acquire the art of "making up medicines." This induces many young men to attend an apothecary's shop, with the view of obtaining, in a few months what in a surgeon's *study*, requires whole years of drudgery. But surely the art of pharmacy is not the only, or even the principal, one to be acquired during an apprenticeship. Were it so, it would be really useless; for the reviewer is quite correct in stating that it can be better learned in a druggist's shop, or a chemist's laboratory, than in the *studies* of most surgeons. Many of these have too little leisure to allow their conducting and exhibiting to their apprentices the complex and delicate processes of chemical pharmacy. The excellent courses which are given of this very branch in the university, and by private lecturers, supersede any systematic instructions by those less conversant with its minute details. But whatever might have been the case in former times, I conceive that apprentices are now entirely aware that this is not the purpose of an apprenticeship, and that they come to their master, not to be taught pharmaceutical chemistry any more than anatomy and physiology, but for the general direction of their studies, and for obtaining a knowledge of those practical details, which no lecturer, in the usual sense of the word, can communicate. It is upon this that I ground the claims of an apprenticeship to be of real advantage to a student of medicine, and I cannot see how it can, when properly regulated, be any thing like a hindrance to him in his studies. An apprentice receives the same education which another student does,—he attends the same classes,—he embraces the same opportunities,—and, besides these, he receives additional advantages from the general inspection of his master, from the frequent examination on professional subjects which he undergoes, either separately or along with his fellow-apprentices; and from those real clinical lectures, though not dignified by the name, which are so much the more useful, that they are occasional, private, and frequent. A professor with 200 or 300 pupils, cannot inspect, with satisfaction to himself, their general progress and conduct, and if he examine them on what they have been hearing, (as a few of our Edinburgh professors do,) he cannot, from their numbers, carry on this most important exercise in the minute and discriminating way which the different progress and different dispositions of his pupils require. But a master, with half a dozen apprentices, possesses every advantage for instructing them in the most perfect way. He knows their dispositions, and can accommodate his mode of instruction to these; he knows their mental progress, and can deal out to them the kind and degree of instruction which they require; and he can put in practice the education of circumstances, of all others the most profitable. It is not sufficient for an objector to say, that some masters pay no attention to their apprentices; that some so occupy and harass them with pharmaceutical employments as to give them little leisure for their private studies; and that some are incompetent to the duty of instruction. These are exceptions to the general character of masters, or if they be more numerous than I believe they are, still it is not the men but the system which I defend. The system is not only an unobjectionable, but an admirable one, and if it be neglected by an indolent man, or perverted by a selfish one, the evils likely to result, ought not, in fairness, to be charged upon it. It is to be considered as primarily intended for the good of the apprentice; and when a master finds, that from indolence, from press of professional business, or from any other cause, he is unable to do justice to the education of the young men placed under his care, he is bound in honour to liberate them from their engagement. He is paid for instructing them, and if he does his duty he is not overpaid, but if he is prevented from doing this, he ought to give it up.

The reviewer lays great stress upon the fact, that, " after the gradual withdrawing of various reservations in favour of apprentices, the last code of study of the Edinburgh College contains not a single clause in their favour." Whether the College were right in this measure, may admit of some question, but the principle upon which they acted was a conviction, not of the evils of apprenticeships, but of their inefficacy as substitutes for instruction by lectures, which they considered indispensable to apprentices, as well as other students, and as not necessarily supplied by apprenticeships. That the College do not consider apprenticeships as hindrances to young men in their professional studies, or even as expedients "of compelling each candidate to serve the customers, and fill the purses of its fellows," as the reviewer delicately avers, is proved by the latest complete set of regulations, published in 1822, (for what the reviewer refers to is merely a list of classes,) in the introductory part of which it is stated, that "they have to regret the very general neglect of that practical education which can best, perhaps only, be obtained by serving an apprenticeship, in early youth, to a regular practitioner." This is the true way of viewing the question. Lectures and demonstrations, by a public teacher, are indispensable, or nearly so, to the acquirement of professional knowledge; the cases in which this can be otherwise obtained are so rare, that they need not be taken into the account; but apprenticeships are also necessary, and either apprenticeships, or something like them, are indispensable to the acquisition of practical skill.

In the sentence already quoted, in which the reviewer claims for unapprenticed students a superiority over others, he introduces the saving clause "under proper directors." In every case under my knowledge, the master acts as the director of the studies of his apprentices, and the very circumstance of his being invested with a degree of power, will make his advice much more effectual than otherwise it would be. Without some friend to advise as to his course of study, the young student will, at first, be continually making blunders with respect to it, and often wasting his money and his time by attending classes for which he is unfitted, and which he is led to choose from some undefined whim, or from the capricious advice of some companion. Every one knows, too, that the advice of a voluntary director is frequently much less regarded than it ought to be, merely from the influence of the same causes; and I am quite satisfied, that, excepting in the case of young men of matured understandings, and of enthusiastic zeal, an apprenticeship would be of essential benefit to every student, even in this respect. Whether its term ought to be prolonged to its present extent, is a different question. It should be recollected, however, that apprenticeships for five years are usually entered into for the acquirement of a civil right, and that the College of Surgeons has always permitted its fellows to shorten these by one year, in every case where the master thinks this indulgence expedient.

But the reviewer disapproves of apprenticeships, not only as clogging a young man in his professional pursuits, but as exerting an injurious influence upon his moral character. He says of apprentices in Edinburgh, " that amusement being always at their elbow in the shape of merry companions, it cannot possibly be resisted: that a single idle lad taints the whole shop with idleness." This assertion is, like the former one, partially true; but if it be meant to express the universal, or even the usual state of matters with our apprentices, it is quite incorrect.

Every one knows that vice is contagious, and that, if a young man of dissipated habits, possessing, at the same time, a strong intellect, and agreeable manners, be placed much in the company of his inferiors in mental power and firmness, his intercourse is almost sure to injure them. Every surgeon who has been a few years in the profession has experienced this, and some gentlemen have found it necessary forcibly to break up the hurtful connection thus formed, by dismissing the leading offender, or, in other cases, by declining to receive any new apprentices till the evil example had been removed. But is this the general case? Are surgical apprentices so noted for idleness and vice? I am sure this will not be asserted. And, supposing that, under this impression, a parent declines to bind his son as an apprentice, and sends him to Edinburgh merely as a student, he cannot be secured against idle companions so long as he is a student, so long as he is a young man, fond of society, and more interested in the pleasing manners than in the virtuous principles of his associates. Unapprenticed students are as gregarious as apprentices are; they soon form intimacies as close as those acquired in a surgeon's *study;* and the nature of the intimacies depends almost entirely upon the previous habits of the young men, and the degree of attention paid to them by their relatives and friends. In this respect, too, I conceive that an apprenticeship will be of real advantage. The apprentice will be exposed equally with other students to the contagion of surrounding vice; he will be tempted equally by idle companions; but he has, (what every other student has not,) in his master, a friend on the spot; a director qualified to advise and assist him, and whose duty it is to inspect his moral conduct as well as his professional improvement. Be it remembered, too, that from the daily intercourse which he maintains with his apprentices, a master has opportunities of detecting an injurious habit before it will have been very evident to other friends, and it will be in his power also to give advice, warning, or reproof, in a less obnoxious manner, and with an influence which will give greater likelihood of success. It is a great loss to medical students, that they begin their studies at a distance from home, when just removed from the restraints of school, and before they have acquired that steadiness which the lapse of a few years produces. A young student is in great danger of acquiring idle and dissipated habits, and it is the duty of his parents to provide for him every safeguard in their power. The inspection of a master, or even of a parent, will not infallibly secure his virtuous conduct; but surely it makes his fall into vice less easy,—it imposes restraints upon him,—it offers inducements to virtue, and consequently it must be of essential benefit.

I cannot conclude without repeating my conviction of the obligations under which you have laid the medical public, by the valuable article, on a part of which I have thought it necessary to animadvert. I trust you will excuse the freedom with which I have done so, and believe me your respectful servant,

WILLIAM BROWN.*

Edinburgh, 23*d May* 1826.

ART. XVI.—*History of Two Cases from Puncture in Dissection terminating Fatally.* By JAMES DEASE, M. D. Surgeon to the Forces. Communicated to Dr DUNCAN Junior.

CASE I.

HOSPITAL Sergeant John Bell, a native of Ireland, by trade a grocer, aged 41, of rather a sanguine temperament, corpulent, and of a leucophlegmatic and highly scrofulous habit of body, has been seventeen years and a half in the 38th regiment, and served with that corps in the army of Spain and Portugal; was four years at the Cape of Good Hope, and one year in Bengal, by which his health did not appear to have suffered much. He served eight years in the 38th regiment as hospital sergeant, and three years in the 17th in the same capacity.

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* The insertion of Mr Brown's animadversions on the observations made by us on the value of apprenticeship, as a means of medical education, puts our readers in possession of the leading arguments on each side of an important question. Mr Brown has entered into the controversy with so much courteousness towards us, that we do not feel inclined to examine very closely his statements and inferences. After all, there is perhaps no great difference between us as to the real value of apprenticeships; and were the inquiry pushed to the utmost, we might arrive at an indeterminate conclusion, such as, that apprenticeship, where there is a medical school, under a good master, and with good fellow-apprentices, is *good;* under a bad master, or with bad fellow-apprentices, it is *bad.* We are at all events glad to have confirmed, from so competent a judge, what we already believed from our own observation, that masters now pay more attention to the instruction of their apprentices, than they did in our days, who served thirty years ago. We cannot, however, concede to Mr Brown, that we were wrong in agitating the question of apprenticeship in general, from the fear of disturbing the unanimity of the profession in this country in condemning one form of it. Our silence would not have prevented inquiry, and if it could have that effect, we should have been to blame; for inquiry, properly conducted, must be advantageous to the cause of truth, and the sooner that truth is discovered the better.—EDITOR.

Whilst assisting in sewing up the body of private Edward Farmer, on Tuesday the 28th February, who had died of enteritis, he pricked the thumb of the right hand, but paid no attention to it, as it was very trifling. On the evening of the 1st March he first complained of feeling unwell; said that he had headach, and felt rigors. (As I was ill in bed with fever from the same cause, having torn the forefinger of the right hand with a splinter of bone in opening the cranium, I did not prescribe for him.) Mr Stephenson staff assistant-surgeon, saw and prescribed for him. The following morning I saw him at the hospital. He complained of headach and general fever; pulse was 84, moderate; tongue foul; bowels confined; the pain in the thumb was very severe, attended with throbbing. He took *Hydr. submur. gr. v. Extract. opii. gr. i.*, and in three hours *Magnes. sulphat. ℥ss.* His thirst was urgent, and he drank plentifully of acid drinks; the medicine operated gently; and during the day he took two doses of saline mixture, with ten grains of Dover's powder in each. In the evening the symptoms continued much the same; took *Tinct. opii. gtt. xl.*

3d, mane.—Has passed a restless night; the pain in the thumb very severe, and a vesication is formed in the place where the prick was made, on opening which a little dark brown fluid was evacuated, which gave some relief. The fore-arm is becoming painful, the skin appears tight, and there are several streaks of inflamed lymphatics extending to the elbow; his skin is rather hot and dry; tongue extremely loaded, but the edges of a bright red colour; pulse rather small, 90; bowels twice opened during the night. Poultice and fomentations—saline mixture with *Pulv. Doveri.*

3d, vesp.—The arm has been very painful during the day, and still continues so; pulse regular and soft; skin cooler than in the morning; bowels once relieved during the day.

℞ *Calomel. gr. v. Opii. gr. i. hora somni. Continr. cataplasma.*

4th, mane.—Has passed a restless night; the pain very severe in the fore-arm, and streaks of a very bright-red colour, hard and painful, evident on its surface. The inflammation has not extended beyond the elbow; skin rather hot; tongue extremely loaded; bowels once relieved during the night; thirst very urgent.

Sumat statim Pulv. jal. c. ʒi. et adhibeantur vasis lymphaticis inflammatis hirudines viii. Postea repetatur cataplasma.

4th, vesp.—The symptoms continue much the same, but he says the pain in the arm is not so severe; bowels opened three times by the purgative.

℞ *Tinct. opii, gtt. xxxx.*

5th, mane.—Has slept a little at intervals, but he is in no respect better. The inflammation has spread a little up the arm; skin is hot and dry; tongue extremely furred, but very red and clean at the edges; pulse 100, and small; bowels open; thirst very great.

Sumat Mist. salinam cum Pulv. Doveri.

Vesp.—The inflammation has extended a little upwards; his febrile state is much the same; he says that his arm is not particularly painful.

℞ *Extract. Opii, gr. ij. hora somni.*

6th, mane.—Has passed a very bad night, and has vomited several times; the inflammation has spread nearly to the shoulder; the skin of the fore-arm and arm is very tense, but there is no appearance of suppuration forming; skin and conjunctiva slightly tinged with yellow. The febrile symptoms are not high; pulse 94, rather small; tongue thickly coated with a rough yellow fur; bowels open. He took some brandy and water, which was instantly rejected.

Sumat Calomel. gr. v. Extract. opii, gr. i. quartis horis.

2 P. M.—Vomiting has ceased for three hours, but he has been, and still is, troubled with hiccoughing; symptoms in other respects as in the morning.

Vesp.—The vomiting has returned, and is distressing; skin and eyes more yellow; bowels open; arm and fore-arm much swollen and painful.

℞ *Tinct. opii, gtt. iv.*

7th.—The arm and fore-arm are increased in size and very painful, and there is a manifest aggravation of all the symptoms. His skin and eyes are of a deeper yellow; the hiccoughing constant; heat of skin but little increased; pulse small, 110; the arm and fore-arm increased in size, and very painful, but no evident fluctuation can be felt; his spirits are good, and he does not seem aware of danger, although his mind is quite sound. He takes occasionally a little brandy and water, and *Pil. extract opii, gr. i.* every third or fourth hour.

3 P. M.—From the very tumid state of the arm and fore-arm, although no evident fluctuation could be felt, I thought it advisable to make some deep incisions through the fascia. No matter appeared, but a flow of black blood passed through the wounds. It appeared to us, as if the cellular substance of the extremity generally had been filled with fluid blood, as it is with serum in anasarca. The blood on cooling coagulated,

and bore the most perfect and decided inflammatory character I have ever witnessed. In fact, it was more decidedly inflammatory than I have ever seen it in the worst cases of inflammation of an internal organ. The bleeding relieved the tension of the limb considerably, and whilst the blood was flowing there was a cessation of hiccoughing, but it shortly afterwards returned. The pulse at the wrist was very indistinct, and the hands as well as the feet below the natural standard of heat; warm flannels were applied, and he took some brandy and water.

Vesp.—He appears lower and weaker, but his mind is quite perfect, the symptoms continuing in general the same, but he said that he was free from pain.

8th.—Hora sexta matutina.—He remained tranquil till about eight o'clock, when he became insensible, and he now appears to be sinking fast. He died about eight o'clock.

On examination, the fore-arm and arm, up to the shoulder, were found in an extremely tumid and distended state. The inside of the arm was perfectly gangrenous; the cellular substance was disorganized throughout; the veins were in a state of high inflammation, which extended even into the right auricle.

A small quantity of pus was found in the cellular substance investing the humeral artery and vein. The lungs were gorged with blood, and particularly on the right side, the lungs putting on the appearance of active pneumonia; the pleura on the same side was also much inflamed. The surface of the whole body was of a yellow colour, and gangrenous vesications appeared all over the body.

CASE II.

Mr Stewart, of the Medical Staff of the Army, about 37 years old, thin spare habit, had served upwards of eight years in the West Indies, where he had suffered severely from intermittent fever; returned to England in September last, and had been attending the classes during the last session in Edinburgh; fell a victim to a prick which he received in the middle-finger of the left hand, under the following circumstances:

Whilst opening the body of a phthisical patient, who died in consequence of recent inflammation brought on by exposure to cold, the middle-finger of the left hand was slightly scratched by the ragged end of one of the fractured ribs. This occurred on Saturday the 23d April, about twelve o'clock. Some friends having dined with him on that day, he engaged himself according to his usual habits, and did not get to bed till between two and three o'clock next morning. He did not, however, complain of any uneasiness that day or night, Saturday, and on Sunday went up to the Castle to prosecute the dissection of the body, where he had not been long until he complained of feeling unwell, and shortly after was seized with a cold and shivering fit, which he stated to be very similar to his aguish attacks in the West Indies. He was so unwell as to be obliged to return home and go to bed. I did not see him till six that evening, when I found him labouring under dreadful headach, a hot and dry skin, and furred tongue; pulse was 110, full. He had considerable thirst, and felt extremely restless. He had a slight cough, and expectorated a viscid mucus of a brownish colour.

He had an ounce of Epsom salts, which not having operated sufficiently, he got five grains of calomel, and four of James's powder, which had full effect in the course of the night. All this time he did not complain of any uneasiness in the prick, but on Monday morning he said he felt pain in the axilla, and the part scratched had a small pustule formed on it, not unlike a pustule of small pox when fully maturated. On examining the fore-arm, not the slightest trace of inflamed lymphatics could be observed, nor was their any swelling of the arm; indeed it was in no way altered from the natural form, and he complained only of excruciating pain at the top of the axilla. There was no tumefaction of the parts, but a hardness on a flattened surface was observable, to which he could not allow the finger to be applied in the most gentle manner, and it gave him much pain to raise his arm from his side even to the shortest possible distance. His bowels were kept freely open by calomel, which he took combined with James's powder. The skin continued hot and dry the whole of Monday; the tongue not at all improved, and thirst and headach unabated, preferring acid drinks to all others. A linseed meal poultice was now applied to the axilla, the bulk and weight of which appeared to augment his pain, and not at all alleviate his sufferings. Tuesday he felt no better; passed a sleepless night; his headach undiminished; tongue very foul, skin hot and dry, pulse 120. On the evening of Tuesday, about eight ounces of blood were taken from the temporal artery, which did not relieve his headach; the calomel and James's powder were continued every four hours, and he had an effervescing draught every hour. On Wednesday, the symptoms continued unabated, the tongue was more foul, and he was in no ways better. On this day his bowels were opened by salts and senna; his legs were well fomented with hot flannels, wrung out of warm water, and a copious perspiration induced, which promised at one time to relieve him. A large opiate was administered at night, which, although it did not bring him sleep, procured him a temporary relief from his sufferings. He talked rather incoherently this night and the next morning, which we were induced to attribute in some measure to the effects of the opiate. Thursday his tongue still foul; skin at intervals hot, with pulse upwards of 120, belly open; thirst somewhat diminished; cannot lie except on his back; expectorates rather more than before, and thinks he has got a little additional cold. The calomel and James's powder was continued, and the fomentations to his legs and feet repeated, likewise the poultice and anodyne draught.

Friday.—No alleviation of his symptoms; his stomach has once or twice rejected his medicine and drinks. He complains of pain in the region of the liver, with fulness, and has vomited a quantity of bilious matter; he complains of pain on pressure and uneasy sensations from the weight of the poultice, which he has removed, expressing an unwillingness to have another applied. The headach towards evening a good deal subsided; a few leeches were applied to the part where he felt pain on pressure on the side; they bled freely, from which he expressed relief.

Saturday.—He complained of feeling very weak; tongue still foul; cough frequent, with free expectoration; the wandering under which he laboured entirely removed. It was now deemed prudent to administer stimuli, and he took eight grains of the carbonate of ammonia every four hours with camphor mixture, and in the intervals wine, brandy, and a small quantity of jelly. The latter he had been taking with beef-tea the day before, but he did not relish either, and if he took them in any quantity, they were rejected, and seemed to induce hiccup. His breathing now became hurried; the stimuli were persevered in steadily, but produced no apparent effect until evening, when a moisture broke out all over the surface, particularly on the face and neck. He could now lie on either side for the first time, and felt perfectly easy; but his strength was evidently sinking, his breathing becoming more hurried and difficult until he expired, on Sunday morning about seven o'clock. He was perfectly collected for forty-eight hours previously.

On looking at the axilla it was perfectly black for two hand's-breadth down the side, but the arm and fore-arm was not in the slightest degree inflamed or altered. The pustule on the finger was flattened, and had put on a black gangrenous appearance.

This is only from memory, as no notes were kept of the case at the time of its being under treatment. There was no examination of the body, as no one expressed a wish to do so, and I could not bring myself to examine the body of my sincere and affectionate friend.

Edinburgh Castle, May 1826.

ART. XVII.—*Femoral Aneurism of both Sides in the same Person cured by Tying the External Iliac Arteries.* By DAVID TAIT, Surgeon, Paisley.

DAVID CUMMING, at present aged 54 years, of a stout make and ruddy complexion, became my patient first in 1814. He had served as a trooper in the Scotch Greys for twenty-one years, was discharged, and returned to this place at the above period, completely disabled with severe rheumatism. He underwent at this time a course of mercury and twelve weeks confinement, when he gradually recovered, so as to walk with no other impediment than a very slight pain and weakness in one of his ankles and foot of the same side, which made him halt for about a twelvemonth. From this period, he became carter to a soap-boiler in town, in the course of which employment, although exposed to all the vicissitudes of the weather, sometimes to unusual bodily exertion, and considerable fatigue, he continued to enjoy good health, and scarcely ever required to consult me for any ailment till the latter end of 1824, when he called to take my advice about a swelling situated in his right groin.

On my examining him, I found a pulsating tumour about the size of a Seville orange, on the right side, in the site of the femoral artery, as high up as Poupart's ligament, and to my surprise, on farther examination, I detected another tumour of the same nature, but somewhat smaller, situated in a precisely similar situation on the left side. From the existence of two aneurisms, it struck me there might be more extensive disease in the arterial system; and, accordingly, I made a complete examination of all the larger arteries, but found them apparently sound; nor was there any unusual pulsation either in the chest or abdomen, indicative of any disease in the ascending or descending aorta.

On asking the patient if he knew of any cause that could produce his complaints, he replied, that, about four months ago, when he was unloading a cart, the sharp edge of a cask, containing 16 cwt. of oil, came down upon his right groin and grazed it; that at this moment he suffered severe pain, became faintish, and was obliged to sit down till he recovered himself, and that soon after this, he felt a swelling begin in the *right* groin. That sometime after this accident, he came suddenly, and at unawares, with a considerable push against the hind shaft of a cart, striking his *left* groin with a good deal of force; that he again received a considerable shock, and now dreaded he was going to be disabled in both sides.

During my examination of him, he seemed not to be conscious that there was any thing materially wrong with the left side. He always directed my attention to the right side, saying he felt no pain in the left, but that the right one was giving him some uneasiness, particularly when he used any unusual exertion. At this period, the right thigh, from the upper part, down to the knee, was fully an inch thicker than the left, this latter being no way altered from the natural state. When he found me rather minute in my inquires, he became anxious to learn the nature of his complaint, and what relief could be afforded him. After he had repeatedly insisted on knowing what could be done for his benefit, I replied, that he could not expect much help except from a surgical operation. This he declared he would not submit to until his sufferings became insupportable, and he left me rather abruptly.

I had frequent opportunities of casually seeing him in the course of the winter and spring months. He from time to time detailed to me the increase of pain and size of the swelling in the right groin, and said that he often felt the pain extending down the thigh to the knee and ham. In the beginning of April 1825, he called again, and stated his sufferings to be exceedingly severe. I examined him, and found the tumour had enlarged considerably from the time I had last seen it. The veins had also greatly increased in size, so much so, that they assumed nearly the appearance of those seen in a varicose limb. The right thigh and leg were considerably thicker, when measured, than the limb of the side opposite, (from two to three inches.) Yet, although the swelling had thus increased, the limb did not appear to be œdematous, nor did it pit when pressed. It is a remarkable fact, that the swelling in the limb began from the upper part of the thigh, and increased slowly downwards to the ankle, when it stopped, for the foot was never swelled.

The tumour in the right groin had now extended in all directions, particularly along the margin of Poupart's ligament, towards the anterior superior spinous process of the ilium. The pulsation in the swelling was very strong, and easily felt over a surface of from three to four inches up and down, and from side to side, the broadest part of the pulsating surface being situated along Poupart's ligament, and the pulsation strongest where the tumour was most elevated. It was now about the size of the fist, with rather a flattened appearance. For some weeks, previous to this date, he had suffered grievously from pain in the tumour, often stretching down along the course of the triceps muscle, to the knee and ham. He often slept ill at night from the severity of the pain, and now began to think that something must be done for his relief, and expressed himself so, that if he thought he would recover, he would let me attempt an operation.

The poor fellow's case was, no doubt, discouraging enough, as he was given to understand, that, after he had submitted to one operation, and had had the good fortune to survive it, another of the same kind would require to be afterwards undertaken for the cure of the disease of the left side. I mentioned to him, that, whenever he made up his mind to submit to the operation, I was ready to perform it, and that the less delay that now took place the better. Farther, I strongly impressed on him, that I considered the operation was the only hope he had of rescuing himself, on one hand, from a sudden death from hemorrhagy; or, on the other, from sinking with dreadful suffering under a continually advancing and painful disease.

By the end of April, he was undergoing such excruciating torment from pain in the tumour and limb, that he resolved to submit to an operation, let the consequences be what they would; and two days prior to its being undertaken, he said "he would rather submit to be cut to inches than endure such suffering."

FIRST OPERATION.

The bowels being well cleared on Thursday and Saturday previous to the operation, by two doses of the sulphate of magnesia, I proceeded to the operation at eleven A. M. on Sunday the 8th day of May 1825, in presence of my professional friends, Drs White, Kerr, and Wylie, Messrs M'Leod, Henning, Ritchie, Kerr, and Orr, surgeons. The patient being laid on a table, I commenced my incision, about three inches above the tumour, in a line parallel to the linea alba, and about two inches from the anterior superior spinous process of the ileum, bringing it down to the upper margin of the tumour, and rather a little over it, making my first incision in all about three inches and a-half in length. After dividing the skin, cellular texture, and superficial fascia, the aponeurosis of the external oblique was brought into view, which was now divided for two and a-half inches by an incision in the direction of the external wound, whose lower extremity reached very near the edge of Poupart's ligament. I then insinuated my fore-finger under the margin of the internal oblique and transversalis muscles. I effected this with considerable difficulty, from the tenseness of the muscles and the close adhesion of parts. I divided upwards the two muscles upon my finger, with a crooked bistoury fully an inch and a-half, when the peritoneum came into view. In attempting cautiously to separate it from its connections, which I found more firm than I expected, I soon perceived I had made a small rent into the peritoneum, I supposed with the point of my nail, which I had purposely left rather sharp, to assist me in separating the artery from its connections. By still persevering very cautiously to separate the peritoneum below the small rent I had made, I came in contact with the artery,—felt it beating strongly, and firmly bound down. During my endeavour to separate the artery from its connections, the patient seemed to suffer severe pain, and while I was attempting to seize it between my fore-finger and thumb, while under severe pain, he made a straining effort with the muscles of the belly, which had the effect of protruding a portion of intestine, and very much enlarging the small rent I had made in the peritoneum. The intestine was instantly pushed back by the finger of an assistant. While all this was going on, I felt the pulsation in the aneurismal sac beating strongly under my hand. I now directed my undivided attention to the laying hold of the artery.

This, however, is by no means of easy execution ; for independently of the depth of the wound, in a great measure depriving the operator of the free use of his fingers, the artery is so firmly bound down, and surrounded by so firm a sheath, that the very limited instrumental aid which can with safety be employed is of very difficult application. The only aid besides my finger and thumb I obtained, was from the blunt handle of the aneurism needle, (marked No. 1, which I herewith transmit.) By perseverance in these means, first gently lifting the artery and drawing it towards the right side, thereby separating it from the vein, then applying the eye of the aneurismal needle, armed with a ligature, close to the sides of the artery under my finger and thumb, and then depressing towards the mesial line the handle of the instrument, I at length succeeded, and had now the needle fairly under the artery. I tied the artery with a single ligature, made of simple twine, and distinctly felt, when drawing it tight, the coats of the vessel give way under my fingers. No sooner was the artery tied than the pulsation stopped, and he was instantly free of pain in the tumour. Two stitches, with adhesive straps and bandage, secured the wound. As there was no vessel of any size cut, little blood was lost.

The whole limb was enveloped with flannel and fleeces of carded cotton-wool, to preserve and retain all the heat of the limb. After his removal to bed, the patient felt the foot cold, and a good deal of pain in the wound. The limb was supported with pillows under the ham, with the knee bent. A draught containing forty-five drops of tincture of opium was administered.

The first twelve hours after the operation he continued pretty easy, only occasionally complaining of pain in the wound. By midnight, the pulse was full, strong, and frequent ; the pain of the wound fully more severe. He was bled to the amount of sixteen ounces, and had a repetition of the anodyne.

Monday 9th, nine o'clock in the morning.—Pulse 100; had some rest in the course of the morning; feels very little pain or uneasiness, except at times, in the wounds; toes and foot, to his feelings, are cold. He has no pain in the tumour, and it is even less in size. He was removed from a concealed bed to one more airy in the middle of the apartment; no exertion was made on his part by the removal, as he was lifted from the one bed to the other by several strong assistants.

8th, P. M.—Has expressed great comfort since he was removed to the open bed; has slept a little in the course of the day; towards the afternoon has had several severe stings in the wound, and when he coughs, the pain is very severe. Pulse 106; tongue clean; he feels thirsty. Ordered an anodyne.

Tuesday 10th, ten o'clock A. M.—He rested tolerably well in the course of last night. Since the morning, he has felt wind moving in his bowels, which he cannot get rid of; has had no passage in his bowels since the operation; pulse 108. A clyster of warm water was given him. I had not left him above half an hour, when he partook of some gruel, rather cold; he was seized soon after with severe pain and uneasiness. The pain commenced at the anterior superior spinous process of the ilium of the right side, and a little towards the same side of the belly. I was immediately sent for, but being out of the way at the time, Dr Wylie visited him in my absence. When I arrived, I learned that another clyster had been administered, with the intention of exciting the intestines to action; instead of its doing so, however, it aggravated all his sufferings. The distension produced by the clysters seemed to do him injury. He supposed the first had done him harm, and still more so the second. It was resolved to repeat them no more, but rather to give a purgative, which might have the effect of giving him a complete clearance of the whole alimentary canal. He had several purgatives ordered him, such as neutral salts, calomel and jalap, all of which he rejected by vomiting. After the vomiting commenced he became still worse, and the breathing became more frequent; he also moaned much, and complained of the increase of pain and fulness in the belly, which he attributed to the clysters still being retained. In order to get quit of part of them, I introduced a flexible catheter into the rectum, and pushed it up the gut, and drew off by this means some of the watery fluid, thereby procuring him a little relief, which, however, was but very temporary. He continued to suffer severe pain, extending more over the belly, which, even towards the *left* side, now created great uneasiness on pressure. He was bled (at noon) till he became pale, with but little relief. He still moaned and complained of severe pain about the haunch-bone, and right side of the belly.

8 o'clock in the evening.—Has suffered severely from pain since the last visit; the belly is now very tender to the touch, very slight pressure giving him pain. At times, the pain increases to such a degree that he cries out and moans much; the wringing pains are very frequent and severe. He was again bled, but although a free opening was made in the vein, no more than from seven to eight ounces would run. No relief from the bleeding.

10 P. M.—His sufferings now extreme; pulse small, and above 140; skin covered with perspiration; hiccough has come on within the last hour; countenance indicative of severe distress; complains grievously of pain where it originally began; wishes to be raised up from his back, for he cannot lie; is very restless, and moans constantly.

12, midnight.—His voice in the moaning evidently altered (weaker); pulse smaller, and scarcely to be numbered; his countenance changed for the worse; skin covered with a clammy sweat; the hands feel cold and tremulous. I left him with the impression that a few hours would put an end to his sufferings, and expected nothing but to hear of his dissolution. In the morning I was sent for to visit him.

Wednesday, half-past 9 A. M. At my visit, I was informed, that, from a little after twelve, till two in the morning, he moaned much, and lay with his eyes mostly shut; that, about two, he opened them and looked up to his wife, and said, "I must be up." She replied she could not grant his request, lest it might injure the wound. He became exceedingly anxious and ungovernable, and still beseeched to be raised up. When he was still refused, he called out, "I will be up, and if you do not assist me, I will rise myself;" calling out again, "It is as well to die with a broken body as a whole one: I will be up, it is but death at any rate." He was carefully elevated, and sat in bed, when some wine and water was given him. Not being satisfied with this, he wished to have a large drink. Got a basin of gruel and butter-milk, which he drank greedily; was laid down, and fell a little more composed. 10 o'clock A. M. He is a little more calm; his symptoms betoken a little improvement; pulse more distinct, above 140; tongue furred, but moist; hiccough abated; thirst considerable; still no passage in the bowels. The utmost quietude to be observed; to have nothing but butter-milk and gruel, which he prefers to all other kinds of drink. 9 P. M. Since the morning, he has had some little broken sleep; he still often moans with the pain in the belly, which, although still very severe, is not so great as it was in the morning; hiccough troubles him less; pulse 140; tongue moist; still thirsty. He is to appearance somewhat better.

Thursday, 9 A. M. Had some sleep in the course of the night; does not complain so much of the haunch-bone, and has less pain in the belly. He is upon the whole better; pulse 140, and firmer in the stroke; countenance improved; now moans but little. The wound was examined and dressed; it looks well; the discharge is puriform. The whole limb feels warm, only the foot and toes are still felt cold by the patient, and he complains of uneasy tingling sensations in all the toes, especially the great one.

Friday, 9 o'clock A. M. Since yesterday he has felt himself considerably easier; the pain, although yet severe, is mostly confined to the haunch-bone; pulse 130, and firmer. His general appearance is now decidedly better. The discharge from the wound is good healthy-looking pus; part of the wound has gone together by adhesion; the aneurismal tumour sensibly diminished; the leg and thigh much less in size; the enlarged veins have entirely subsided.

Saturday, 9 A. M. Slept better last night than he has done since the operation; he still feels some pain in the haunch, but little or none in the belly or wound; pulse 110; tongue furred, but moist; no inclination for food; the wound looks well; granulations are appearing, and look healthy; one of the stitches taken out. Enjoined absolute rest; to continue the usual fare of butter-milk and gruel, and to have no food, since he has no inclination for it.

Sunday, May 15th. Nine in the morning, pulse 100; pain less than yesterday; urine, which has been higher-coloured for several days, is now more natural; has had no stool since the operation. As he continues to improve, and as there can be no great accumulation in the intestines, except from secretions, it was resolved that a day or two should still pass over without a purgative, rest being considered of paramount importance to everything else. Still no appetite for food, and feels sufficiently satisfied with his drink, which he likes warm.

Monday, 9 A. M. Rested well; complains of little pain; pulse falling in frequency; he continues to improve: wound looks well; it is granulating, contracting, and skinning apace. The aneurism of the left side seen pulsating strongly.

Tuesday, 10 A. M. Pulse ranging betwixt 80 and 90; the limb nearly free of swelling; the foot and toes are now warmer; still he feels the toes very uneasy, and cannot permit them to be touched, from the pain he feels when they are handled. Ordered an ounce of castor oil, with cinnamon water.

Wednesday.—The castor oil operated in the course of yesterday and this morning three times. Since the bowels have been cleared, he feels himself much better and lighter in his spirits; wound nearly half skinned. Ordered some light food when he craves.

Thursday.—He took some panada yesterday, which he relished, and to-day feels hungry. He was ordered a little soup, with some bread, to dinner, in addition to toast and tea, which he now takes twice a-day. Every thing doing well.

From this time forward, he continued daily to improve, only requiring a dose of castor oil every alternate day, for about a week to keep his bowels easy, when he came to have a natural stool without medicine every day, or every second day. The ligature came away on the twenty-first day after the operation, and the wound was completely healed twelve days thereafter. He was on the street in a month after the operation. When he walked to any distance he felt the limb weak, and had still a good deal of uneasiness in the toes, and mostly the great one. About the end of the fifth week the aneurismal tumour had diminished nearly a third in size, and was completely absorbed in the course of three or four months.

When the circulation in the limb became complete, the veins began to grow full, and towards night, after walking during the day, they were fuller than natural. The swelling of the thigh and leg has never returned. The only uneasiness that he felt for some months, except that of the toes, was a pain in the belly of the gastrocnemius muscle, obliging him, when he walked to any distance, to stop and rest himself. In the course of autumn he moved about, and occasionally groomed his master's horse, and did some light work. The aneurism of the left side was but slowly increasing in size, and he felt very little uneasiness from it. He received the most pointed injunctions to save himself as much as possible from all extra-exertions and fatigue.

In the beginning of winter he resumed his ordinary occupation of going about with a cart, contrary to my desire and remonstrances. He exposed himself to wet, cold, and fatigue, during the middle and latter end of winter and beginning of spring. This imprudent conduct on his part, not only increased the size of the left aneurism, but he contracted a severe cold, accompanied with cough. Although the tumour was enlarging, he felt little or no pain, except when it was handled, or when using much exertion.

In the month of March last, when I examined the tumour narrowly, I found it had increased in size; it had encroached as far upon Poupart's ligament as the former one on the right side, only it did not extend so far out towards the ilium. It was also more uniform, and its outline assumed an oval shape. The extent of surface felt pulsating was nearly as much as the one upon the right side before the operation. I may here mention, that, although the aneurism had acquired nearly the bulk of the former, the veins were little swelled; the limb only about an inch thicker than the other, and little pain comparatively.

The patient now began to dread the increase in size of the tumour, and as the summer was approaching, he resolved to have the operation done before the warm weather set in. For some private reason he wished to have it postponed till about the middle of April.

The apartment in which he lodges is but small; and as the case was now exciting a great degree of interest, several of my medical friends from a distance had expressed a wish to see the operation. For their convenience and the patient's advantage, I had one of the bed-steads taken from the House of Recovery. It was made of iron, six feet four inches in length, with side boards made of wood, which could be taken out and put in at pleasure.

SECOND OPERATION.

The bowels were well cleared, as in the first instance, two days previous. A bandage of flannel encircled the whole limb from the toes to the upper third of the thigh; and that he might have the full advantage of rest, and be in no way disturbed after the operation, I resolved to operate upon him in the bed. In addition to most of the gentlemen who were at the last operation, there were present my friends Messrs Thomson, Campbell, Torbet, Craig, M'Laws, and Young, surgeons. On Sunday the 16th day of April 1826, I proceeded to the operation. I commenced my incision in the direction of the artery, nearly in the same line on the left as when I operated on the right. The aneurismal tumour had rather tilted over Poupart's ligament, so that part of the skin covering it was cut in the external incision, which was in all about three inches and a half in length. In going down through the skin, cellular texture, fat, and superficial fascia covering the tendon of the external oblique, two arteries were cut and secured. Fully two inches of the aponeurosis of the external oblique was next divided; but although the muscular fibres of the internal oblique thus came distinctly into view, I found that the fibres of the external oblique fascia, crossing, in some degree, the inferior angle of my incision, prevented me from easily effecting the division of the internal oblique muscle, until I made a cross cut, about half an inch in length, in the lateral half of the divided aponeurosis.

This at once gave me freedom. Prior to the operation, I had resolved either to cut the whole of the internal oblique fibres at once upon the point of my finger, or if I found this could not be effected without much stretching, to cut them fibre by fibre. On attempting to insinuate my fore-finger under the margin of the internal oblique muscle, I found the aneurism so close and bulging upon it, that I gave the patient great pain in the attempt, so that I desisted; and now raising in succession, by means of a director, the fibres of both it and the transversalis, I cut them across. The transversalis fascia was now distinctly exposed, and cut on the director. Now the peritoneum appeared. After very cautiously pushing it upwards and inwards with the point of my fore-finger, I came in contact with the artery. It was deep, and very firmly attached. I found I could easily press its sides with the point of my fore-finger down upon the psoas muscle, but I could not at first seize the vessel betwixt my finger and thumb, owing to the depth of the wound. I made frequent and repeated attempts to make such a detachment of the artery from its surrounding connections, as to seize it betwixt my finger and thumb, during which the patient suffered great pain, and roared out sometimes loudly. After a good deal of perseverance, I at last laid hold of nearly the whole cylinder of the vessel, and drawing it a little upwards and aside from the vein, I tried my new aneurismal needle, (marked No. 2,) but was obliged to abandon it, and lay hold of my former one. With the artery now fairly under my finger and thumb, I laid the point of the needle closely under it from the inside, when I brought the needle through under the artery armed with a ligature. Before the needle was withdrawn, the artery was seen on it, very cleanly taken up; and when pressed upon the hook, the pulsation in the tumour stopped, showing it was the artery that was secured. I drew the ligature (which was the same kind of twine as I last used) very tight, and again felt the coats of the artery give way under my fingers; two stitches, with straps and a bandage, secured the wound as before. The limb was laid and supported by pillows, as in the first instance.

I was longer in performing this than the first operation, and the patient was more exhausted. As he required no removal, he was left with orders to keep him quiet, and to give him the gruel that he was formerly fond of. An hour after the operation his pulse was 72; he felt nothing disagreeable, farther than a feeling of coldness in the toes and heel, with a slight uneasiness in the calf, that was relieved by holding it with the hands. He had an anodyne draught, containing thirty-five drops tinct.

opii. At 11 P. M. his pulse continued slow; and he was ordered a repetition of the anodyne at midnight.

Monday, 10 A. M.—Had some sleep in the course of the night; pulse 80; tongue clean; complains of a little pain in the wound, increased on coughing; countenance good; breathing easy; feels the limb pretty well, only the toes are still cold. 8 P. M.—Pulse 96; tongue slightly white, but moist; has little pain, except when he coughs. A slight perspiration came on about six, since which he has had some sleep. He appears better in the same time than he was after the first operation.

Tuesday, 9 A. M.—Had some natural rest last night and this morning. Pulse 98; skin moist; limb at the ham rather uneasy from the tightness of the bandage; tongue rather whiter than yesterday; he complains to-day more of the wound when he coughs; no thirst; his general appearance very flattering; had some light breakfast of toast and tea this morning, 6 P. M. Had a little sleep during the forenoon; has been complaining of pain in his back since the afternoon; this seems to be owing to his lying mostly in this position. Pulse 98; toes still feel cold although very well covered; has the complete use of the limb, and moves his toes without any pain, voids his urine easily, and expels some flatus from the intestines. Ordered an anodyne at night.

Wednesday, 9 A. M.—Had a good night, and feels himself better this morning than he was yesterday. When he is at rest he feels little or no pain in the wound, but when he coughs or hems, he feels it tell sharply in the situation of the cut. 8 P. M. At this visit he is complaining very much of the pain in his back. Since the operation he has never changed his position from the back; he is sliding down towards the foot of the bed, and his head is low. He implored to be elevated to a more erect posture; with the help of assistants he was brought to a semi-erect position; he was no sooner raised, and supported by pillows, than he became quite easy.

Thursday morning.—Rested little in the course of the night, but towards morning had good sleep; pulse 80; tongue cleaner. The wound dressed and looks well; one third of it at the upper part united by adhesion; the skin at the edges of the lower part highly inflamed. One of the stitches taken out, which seemed to be inflaming the skin. The bandages on the limb to-day, for the first time, undone; it preserves its natural colour, only the foot is blanched-like; the toes and foot still feel cold; every thing seems to be going on favourably.

Friday, 8 A. M.—Had a good night; rested better than any night since the operation. Pulse 76; tongue clean; free of thirst; feels some inclination for food; the wound healing.

Sunday, April 23d.—Has been doing so well for the last two days, nothing more was requisite to attend to, than the dressing of the wound, which continues to heal. The toes and heel are getting warmer to his feelings. An ounce of castor oil and some cinnamon water ordered.

Monday, April 24.—The castor oil operated three times in the course of yesterday. Took some broth, which he relished very much. Complains to-day of a stiffness in the toes; they are so very sensible, that he cannot allow them to be touched. There is nothing *apparently* wrong with them. The heat of the foot is now nearly natural, and it is not just so pale. Pulse 68 in the minute. The suppuration from the wound is thick, and rather more copious to-day. What of the wound has not united by the first intention, is granulating and skinning by degrees.

Wednesday, April 26.—Pulse 68; tongue clean. His general appearance betokens a good recovery. The painful sensation in the toes is increased; it extends all over them, and he has no power to move them; they are exceedingly tender when handled. They were rubbed with lard, and a fleece of carded cotton wool laid over them. Since this application, he feels them easier, but cannot move them.

Thursday, 9 A. M.—He feels the toes better; has less tenderness in them, and can now move them. The cutaneous veins were seen yesterday, circulating the blood about the outer ankle. The aneurismal tumour diminishing; it feels very hard when handled. The discharge but trifling from the wound; it is healing rapidly. 7 P. M. At my visit just now, I was informed, that, in the afternoon, he began to complain of his head and ear; the pain extending from the ear to the shoulder of the right side. He also complains of some pain in the breast, about two inches from the upper part of the sternum, which is increased when he inspires deeply. Pulse accelerated (84.) It was stated that he had felt very cold in the course of the last night. To-day the weather has been extremely cold for the season; he feels his right limb so cold, that he wants heat applied to it. He is rather downcast. Having had no passage in his bowels for two days, he was ordered another dose of castor oil; a piece of warm flannel to be laid to the breast, and rest rigidly enjoined.

Friday, 8 A. M.—Pulse 78; was somewhat easier last night by twelve o'clock; had two stools with the oil in the course of the night; appears better to-day. He does not complain so much of the breast; feels a little sick, and is still downcast. It has always been a feature in this patient's disposition to fear the worst when any way out of order. The whole line of the wound that has not united, is now completely filled with healthy granulations, contracting and skinning progressively.

Sunday.—Slept well, and has no complaint; to-day he got to his feet to have the bed made. When he put his foot first to the floor, he felt a tingling sensation, and could not stand steadily on it, although he moved the limb and foot with agility and freedom before he got up. Pulse not increased by being out of bed.

Tuesday, May 2d.—Feels quite well; pulse natural; appetite good. The wound all cicatrized, except where the ligature hangs out. The solid contents of the sac absorbing, but slowly; the tumour may nearly have diminished one-third in size since the operation. The leg and thigh fallen off in flesh; the foot now as warm as the other; the motion free, and tenderness gone.

From this time, he continued to rest in bed till the end of the fourth week, taking more generous diet, and a daily allowance of wine. Since the beginning of the fifth week, he has been daily out on the streets, and walks about at his leisure. He feels the limb of the left side sooner tired than the other, but imagines, that, by-and-bye, the left leg will be the stronger of the two. The ligature came away of its own accord at the end of the sixth week, and the wound was completely healed in three or four days after.

On the first of June, he called upon me, when I caused him to strip and stand before me. He appears very fresh and healthy; the belly is rather full, from fat; the cicatrix on the right side at the lower part is fully an inch in breadth, and there is a slight puffiness felt on pressing it with the finger; that on the left is now a mere red line firmly united, with a dimple at the lower part resembling the cup-like cicatrix of a gun-shot wound. There is not the most distant vestige remaining of the aneurismal tumour of the right side; the sac and its contents on the left still to a certain degree prominent, and felt, when grasped, of a stony hardness. The tumour is absorbing gradually, and lessening every week. The limbs differ very little in thickness when measured; the right is rather the thickest of the two; the veins seem fuller on the right than the left. After a minute investigation of both limbs from the groin downwards to the toes, there is no artery to be felt beating. He walks well.

Paisley.

REMARKS.[*]

I have now given a circumstantial detail of this important case. To some it may appear that I have been tedious in the extension of my reports, yet a wish on my part candidly to compare the two operations, and to show the difference as to the safety of my patient in the one case where the peritoneum was ruptured, and in the other where it was not, will, I trust, be received as a sufficient apology for having been somewhat minute. In the first instance, the patient had a very narrow escape for his life; in the second, he may be said to have recovered without a single bad symptom.

It will be seen, on reviewing the case, that the only material points in which I have deviated from the method recommended by Mr Abernethy, are, first, that in both operations I disturbed and separated the artery less from its connections, and employed but one ligature; and, secondly, that in the last operation, in going down to the peritoneum, I divided the muscles fibre by fibre. I believe it will be allowed on all hands, that the less separation an artery suffers from its surrounding connections, and the less irritation that is around and about it, so much the greater will be the chance of its uniting completely. And as to my second deviation—in a strong muscular subject whose fibres are firm, the stretch in separating all at once such a bundle of muscular fibres from the peritoneum, as the internal oblique and transversalis constitute, must be considerable even where it can be properly accomplished:—this is avoided in going down through the muscles by degrees.

It is rather remarkable, that a person of such ability and experience as Mr Dupuytren should still use a ligature of safety in the taking up of arteries for aneurism, at least he did so on the 4th October 1821,[†] in the case of a stout man, where he took up the external iliac artery for femoral aneurism in the Hotel Dieu. The patient died on the fourth day after the operation. I hold in my possession the identical ligatures that tied this man's artery; each ligature consists of six threads, each thread of three plies. After Mr D. had tied the artery, he carried his ligature of safety upwards on the vessel, in case that hemorrhagy should follow at the separation of the first ligature. This plan certainly denudes the artery from its surrounding and close connections; it tears also the vasa vasorum; besides, it creates an additional source of irritation above the point where the artery is intended to unite, which must render the chance of union far less, and, of course, the risk of hemorrhagy very great.

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[*] The following remarks did not reach the Editor in time to be printed along with the case, in which some typographical errors have been observed. In page 93, line 32, *read* where *for* when; 96, line 5, *read* wound *for* wounds; and in page 100, last line, *read* laterad *for* lateral.

[†] See also a case where he did the same in taking up the subclavian.—Edin. Med. and Surg. Journal, vol. xvi. p. 201.

The above particulars I have from an intelligent surgeon here, who was not only present at the operation, but assisted after the man's death at the dissection, and brought the ligatures home to this country. He stated that the artery was completely soaked in pus, and no union about it; that the inflammation extended upwards along the aorta; indeed, from my friend's account, this inflammation seemed to be the only pathological cause of the man's death.

The ligatures I employed were formed of a small kind of twine, (made of fine lint, three plies twined,) which the operative weavers here style *simple* twine; it is admirably adapted for tying a large artery, for, on being tightened, it will neither break under the hands, nor cut through the outer coat of the vessel, while it divides completely the inner coats, even although a quantity of additional cellular texture, besides the outer coat of the artery, be included.

It is sometimes not a very easy matter to describe surgical instruments, so as to make them perfectly understood, yet I may endeavour to give some idea of the needles or hooks I used. No. 1. This needle was formed of a narrow plate of iron thinned and rounded on its edges, and about seven inches in length. One extremity of this plate was pierced with an eye, and the other was formed into a handle, by having a broad plate walled to each of its faces. This instrument was bent in its whole length, with the exception of about an inch and a-half at its pierced extremity, into a segment of a very large circle, so that on one face it presented a concave, and on the other a convex surface. The inch and half at the pierced extremity was about two lines in breadth, blunt at the point, and bent into nearly a complete semicircle, in a direction so that its concavity faced the convexity of the handle curve.

In other words, and to describe it loosely, it was an instrument shaped with a sweeping curvature, occupying nearly its whole length, having a smaller one standing nearly at right angles to the first.

No. 2. The second needle was formed of a handle as the first, but in this it was left straight, with the exception of being bent a little upwards just at the point. To the side of this point, there was walled a semicircular curve, having an eye (point and breadth nearly the same as No. 1,) at its free extremity, so that the whole instrument might be likened to a tooth-key, without its handle, in the act of application.

The complete success which has attended these operations, while certainly it affords me one of the highest gratifications the practice of my profession can procure me—chiefly affects Mr Abernethy.

Though the claims of a successful operator on the gratitude of his individual patient be paramount to every thing else, yet on his profession his claim is but secondary. Accident has placed under my treatment, a case, as far as I know, unparalleled in the history of surgery, and it has been cured; but I have only put in practice what every surgeon of these days ought to have done. When, thirty years ago, Mr Abernethy formed the firm resolve of cutting open the walls of the belly and seizing the external iliac—he made a mighty step in advance—he formed an epoch in the history of his profession. John Hunter, from reflecting on the hemorrhagy proceeding from the vessel below the sac, after an operation in 1779,* where Mr Broomfield had, "for security," tied the crural artery three or four inches above the aneurismal sac, had probably the first glimpse at the great improvement of tying, in cases of aneurism, the artery nearer the heart, and at a distant part from the disease.

His eminent successor has extended the principles of the illustrious Hunter. So firmly impressed was Mr Abernethy with the certainty of ultimate success, that, nothing daunted by the unfortunate issue of his two first cases, he persevered, and at length successfully secured the external iliac artery. His steps have been followed by a host, till at length it needed but a case such as mine to add the finishing touch to his well-earned fame.

In doing justice to the merits of such men, we act but the part of prudence—since, if we do not, indignant posterity will.

Paisley, June 9, 1826.

ART. XVIII.—*On the Internal Use of Sulphate of Zinc in Gleet and Leucorrhœa.* By CHARLES W. M. S. GRAHAM, Surgeon, Dalkeith.

OF the various medicines recommended for the cure of gleet, few, perhaps, have been less extensively used than sulphate of zinc, but I have found none so useful.

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* See a Treatise on the Blood, &c. 4to, page 66.

Being often not a little disappointed in the treatment of this disease by the medicines commonly prescribed, viz. Bals. Copaibæ, Pip. Cubeb, &c. I resolved to make trial of the sulphate of zinc, made into pills with common turpentine. I commenced with one of these pills, each containing three grains of the sulphate, morning, noon, and night, and, according to circumstances, I increased the dose to two pills three times a-day, beyond which I never had occasion to go. In every instance they effected a complete cure without the aid of any injection. After the patients had continued their use for eight or ten days, the disease yielded, provided they were abstemious in regard to spirituous and fermented liquors; for I must candidly admit, that, in some instances, the disease was protracted from irregular living.

I am well aware that the sulphate of zinc has been formerly used by others, but I am induced to publish my experience of it, that those who have not thought of it may be led to make trial of it, and that those who have found it, as usually prescribed, unsuccessful in their hands, may push it to the same extent that I have done, which, in no instance, produced vomiting, nausea, or any unpleasant symptoms.

I have no doubt that the same practice will be found beneficial in analogous diseases, for, in a case of leucorrhœa, of six months standing, which lately occurred to me, the same form of pills succeeded to the utmost of my wishes.

Dalkeith.

PART II.

CRITICAL ANALYSIS.

ART. I.—*Remarks on Irritative Fever, commonly called Plymouth Dock-Yard Disease; with Mr Dryden's detailed Account of the Fatal Cases.* By JOHN BUTTER, M. D. F. R. S. F. L. S. & W. S., &c. &c. Devonport, Underwoods. 1825. 8vo, pp. 302.

MOST of our readers know, that considerable alarm was excited, in the autumn of 1824, by instances of severe and fatal consequences, arising from apparently slight injuries, among the artificers employed in the Naval Yard at Devonport. The statements in the public prints were evidently exaggerated as to the effects, and erroneous as to the causes; and the profession were anxious to have an authentic history from the medical officers in charge of the establishment. But in this expectation they have been disappointed, by the much-lamented death of Dr Bell, the superintendent, in consequence of having wounded his finger in the examination of the body of one of the men who died; and it is probable that no further history of the disease would have been published, had it not attracted the notice of so zealous a member of the profession as Dr Butter, to whom we are the more indebted, as, having never been professionally connected with the naval yard, he had no official duty to perform, and having seen only the last case of the disease, *Reeves*, more energy was necessary to collect the materials.* Mr Dryden, however, who had become principal medical officer after Dr Bell's death, not only communicated readily the most authentic information, but actively assisted him in his inquiries, and to Mr

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* Since this article was written, Mr Tripe, surgeon at Devonport, has published, in the London Medical and Physical Journal for 1825, an account of those cases, Walkie and Quick, which came under his personal observation; and in Dr Johnson's Medico-Chirurgical Review for January 1826, an official report by Mr Dryden is noticed.

Dryden's liberality Dr Butter pays a well-merited compliment; but although "the cases were not originally noted down with any view to publication," we regret, that, as being the most authentic record, Mr Dryden's notes were not published in their original state, or at least were not distinguished from the information subsequently obtained from the widows and friends of the deceased, and the testimonies of medical men who had seen any of the patients. With this exception, Dr Butter has merited the approbation of the profession for having furnished them with the most authentic information, which, under the circumstances, could be obtained.

The work may be described as consisting of two parts; the one containing the detailed histories of fifteen cases, with a clinical commentary by Dr Butter subjoined to each, and the other being a general treatise on the subject. We shall first abridge the leading facts of the cases, noticing especially the effects of the detraction of blood, as a subject to which we shall have afterwards occasion to refer, and then examine some of Dr Butter's opinions.

1. Cowle.—Diffuse inflammation of the foot and leg; injury received on the 1st of August 1824. Disease immediate, continuous, and progressive. 7th, Extension of the disease upward, with great aggravation of general fever; bled to 16 ounces; fainting produced; no amendment. 8th, Blood buffed; bled to 10 ounces, and fainting induced; no amendment. 12th, Disease progressive. 15th, Death.

2. Henwood.—Hurt his right hand on August 4. 6th, Disease established; bled to 34 ounces. 7th to 10th, Much better; a succession of sloughy abscesses up to the scapula. 26th, Arm almost well; complains of his left leg. September 1, Disease established in the thigh; extensive suppuration took place; his back and heel became gangrenous from pressure, and he died exhausted on October 2.

3. Bate.—August 16, Finger amputated. 19th, Doing well. 20th, Accession of fever and pain of hand; bled to 24 ounces. 21st, Stump easy; fever continues. 24th, Abdominal tension and pain. 25th, Died. Body examined.—Intestines inflamed, and right kidney imbedded in a large abscess; no mention of any affection of the limb.

4. Butters.—August 10, Hurt on the right hand. 18th, Febrile accession. 20th, Inflammation of the limb; bled to 36 ounces; blood buffed. 21st, Disease progressive; sixteen leeches to temples. 25th, Incision made. 26th, Better. September 8, Convalescent.

5. Horne.—August 30, Injured a left toe; disease progres-

sive, continuous. September 1, Fever. 2d, Twelve leeches to temples. 3d, Twelve leeches to temples. 4th, Fever increased; local affection extending; bled to 20 ounces. 5th, Fever abated. 6th, Fever aggravated; affection extending; bled to 16 ounces; no relief; delirious; bleeding repeated to 24 ounces. 7th, Better. 8th, Sphacelus beginning. 9th, Stupor. 14th, Died comatose. Limb examined; cellular substance œdematous, suppurated, and gangrenous.

6. Nichols.—Rubbed his left shin on 7th, 8th, 9th September. 13th, Leg painful; shiverings. 15th, Pain extended to groin, hip, and back; erratic redness; limb œdematous; increased fever; bled to 36 ounces. 16th, Less fever; tenderness in groin nearly gone. 17th, Incapable of moving limb. 18th, Pain in right hypochondrium; twelve leeches to the part; grew worse; bled in the evening to 20 ounces; syncope produced; twenty-four leeches to abdomen. 19th, Died. Body examined.—Intestines inflamed; abdominal sero-purulent effusion; right kidney disorganized, resembling thick cream.

7. Lobb.—Scratched his shin, 13th September. 17th, Swelling and fever. 19th, Twelve leeches. 22d, Disease advancing; twelve leeches to face. 25th, Leeches repeated. 30th, Disease terminated by desquamation.

8. Rawling.—17th September, Jammed three fingers. 20th, Disease began; bled to 40 ounces. 21st, Easier. 24th, Very bad, whole arm affected, twenty-four leeches. 25th, Tension and inflammation reduced, but life evidently sinking, and died early in the day.

9. Dr James Bell.—Punctured his finger at a dissection, 19th September. 20th, Rigors and fever; bled to 16 ounces. 21st, No affection of the arm, but pain in the pectoral muscle and shoulder; pulse 130 and full; bled to 30 ounces, with no relief. 22d, Worse; pain in shoulder, with inability to move the arm; excruciating pain of back. 23d, Great debility and some delirium. 24th, Stupor, coma, death.

10. Walkie.—13th September, Slight abrasion of leg. October 1st, Red lines extending to groin, which is tender; shivering. 2d, Leg easier; great fever; bled to 30 ounces; no relief; bled again to 24 ounces; twelve leeches to temples. 3d, Metastasis to peritoneum; bled to 22 ounces; syncope; twenty-four leeches to abdomen. 4th, Very bad; twenty-four leeches to abdomen. 5th, Died. Body examined.—Great peritoneal inflammation. "An incision was made into the affected leg, and extended from the ulcer towards the calf, but no traces of inflammation were observable in the cellular substance;" nor was it to be expected, as that part had never been inflamed.

11. Reeves.—9th October, rubbed his shin. 1st November, Sore almost healed; was attacked with inflammation; and slight fever took place. 3d, Erysipelatous redness and great pain. "The absorbent vessels were inflamed along the inner part of the knee and thigh to the groin, where the glands were enlarged, and exquisitely painful to the touch." 4th, Dr Butter saw him, and we quote the appearances as being described from personal observation.

"A dull and unequal redness, not unlike deeply-stained mahogany, now extended itself around the small part of his left leg, from the inner ankle to the calf. The redness was peculiarly mottled, not unlike Erythema papulatum, figured in Willan, without vesications.

"The absorbent vessels, emerging from the reddened patch, were traced, by their vivid colour, up the thigh, and their valves were easily discerned by their knotty appearance. The ulcer still looked fresh and healing.—Agonizing pain prevailed, particularly on the inflamed parts of the limb, and increased by the slightest pressure. The skin was very tense and hot on the affected leg.

"He had evidently suffered from considerable fever, as well as from local pain during the night, and awoke with headach. Pulse 100, and full; bowels freely opened; tongue moist, but a little coated at its base.

"An incision was immediately made by Mr Dryden, through the inflamed skin and subjacent parts down to the Fascia, exceeding five inches in length, between the Tibia and Tendo Achillis, beginning a little above the inner ankle, and carrying it upwards in the direction of the limb. During the operation, Reeves suffered acutely, but more particularly from handling than from cutting the diseased skin.

"The divided edges gaped widely, and looked like sliced bacon or brawn. The epidermis, rete mucosum, and cutis vera, were thicker, denser, and redder than natural. The cellular substance was distended and considerably raised above the muscles by a yellowish, gelatinous, and semi-fluid substance, intermixed here and there with dots of pus, and whitish shreds of slough."

"Several vessels bled freely for a time, and ceased spontaneously. The blood was dark-coloured, though arterial in part. Some lint, sopped in the rectified oil of turpentine, was inserted into the wound, which was well covered with a poultice of oatmeal, first boiled in water, and then worked into a proper consistence with yeast."

In the evening he was already better, and he began a mixture of cinchona. November 25, So far recovered as to walk out.

12. Taylor.—Wounded his toe, August 2d. On the 9th, loathed his food; his foot and toe were now swollen and inflamed. 11th, Bled and subjected to the antiphlogistic treatment.

13th, Mortification of the toe; whole leg greatly tumefied. 14th, Died suddenly.

13. Quick.—Fractured a right toe, 18th August. Resumed his duty as a blacksmith. September 22d or 23d, Fevered; one red patch appeared on his right calf, another on his right thigh, and a third on his left arm. Was treated antiphlogistically, and died on the 29th of September.

Mr Tripe has given a very full history of this case, and a very minute account of the appearances on dissection, which we are tempted to extract, as it is the only instance in which the brain was examined.

" *Examination of the Body, twelve hours after Death.* There were present my apprentices, and Mr J. G. Sparke, a surgeon of Devonport, who kindly assisted me.

" Skin deeply tinctured with bile over the upper parts of the trunk and face. Muscles of the face distorted, and expressive of severe bodily sufferings. Effluvia highly offensive and pungent. Extensive gangrene covering the anterior part of the right foot and leg, which was much swollen.

" More than ordinary exertion required in turning back the scalp; the connecting cellular membrane between it and the pericranium having become so dense as to nearly bring them into union. Much blood effused, from numerous and larger vessels than usual being divided in performing this part of the operation. On the calvaria being forced off, the ruptured vessels in the course of the superior longitudinal sinus bled copiously. The vessels of the dura mater, and the superior longitudinal sinus, were completely gorged. On the removal of the dura mater, a large quantity of serum escaped. The cerebrum appeared as if enveloped with a stratum of coagulable lymph, the third of an inch in thickness, which, being cut into, proved to be a collection of serum, distending the tunica arachnoidea. The superficial veins of the cerebrum were loaded. Medullary substance of the cerebrum, from the surface to the corpus callosum, very dense and solid. The divided vessels, on making the different sections of it, presented extravasated spots of blood, much more expansive and numerous than ordinary. The centrum ovale greatly distended, and, on being cut into, gave exit to a large quantity of serum from the lateral ventricles, which, with the other cavities, were greatly enlarged by the contained fluid. Plexus choroides and investing membranes throughout the ventricles highly injected.

" No appearance beneath the tentorium worthy of particular observation, excepting that the cerebellum partook of the unusual hardness which characterized the cerebrum, and that the lateral sinuses and veins were gorged with blood.

" Some old pleuritic adhesions were rather extensive on the right side of the thorax.

" In the abdomen, the liver, larger than ordinary, had formed adhesions to the right side; its structure more dense than natural, particularly along the anterior margin of the right lobe; its surface pallid, but its interior filled with blood. Gall-bladder distended with bile. The villous coat of the stomach was inflamed throughout, and was covered with spots of ecchymosis. The left kidney twice the natural size; its shape and structural arrangement of regular appearance. The right kidney so wasted and obscured by disease, that it could no where be felt, but was, after much search, traced (by the shrunk ureter) lying high up under the liver, and was with much difficulty removed, from the intimate connection which it had formed, by its thickened cellular coat, to all the surrounding parts. Its organization was destroyed; it had a scirrhous feel, and was loaded with calculous matter.

" The intestines exhibited no morbid appearance, either upon their inner or outer surfaces, at the different points that were examined. Spleen, pancreas, and urinary bladder healthy. Peritoneum generally free from morbid character.

" The parts beneath the cicatrix of the injured toe, from the surface to the bone, were perfectly free from any evidence of disease; nor did it exhibit any proofs that the bone had suffered an injury from the original accident. The cellular membrane investing the tendon of the extensor proprius, about the extremity of the second bone of the great toe, was injected with a yellow and bloody serum. This appearance did not extend in the course of the tendon, but towards the surface, and was soon involved in the general disease of the limb. The fore part of the foot, and lower part of the leg, extensively sphacelated. The cellular substance about the middle and outside of the leg, and extending down to the fascia, much swollen, and filled with bloody serum, and intersected with small cavities containing pus. The texture of the muscles between this and the bones completely destroyed, and converted into a dark-coloured mass, not unlike putrid placenta. An incision made into the cellular substance beneath the patch on the arm of the opposite side, gave exit to a quantity of greyish, unhealthy looking pus. The other spots were not opened, their appearance being precisely similar." 180.

14. Long.—Bruised his right thumb, and slightly abraded his left leg on August 27. Continued at work. September 8th, Fever commenced, and proved fatal on the 10th, in two days.

" Mr Dryden, however, saw Long once during these two days, *ex-officio*, and learnt from the medical advisers, that the patient was labouring under idiopathic congestive fever.

" After death it was ascertained that the fever in Long arose entirely from the injuries received on his hand and leg, in the execution of his duty."

15. Beer.—Was attacked with fever, and acute pain in the right arm-pit and side on September 19th. Venesection to 30 ounces. 20th, Venesection to 16 ounces. 21st, Better. 22d, Pain returned in his axilla and side, with a blush of redness. 23d, Very

restless night. 26th, Died. "Mortification had appeared on his side before death." After death, it was ascertained that his right hand had been wounded by a bit of glass on the 14th; but the wound had given him no trouble, and had healed; and "from the want of connection between the blush on his side, and the injured hand, no suspicion arose as to the really exciting cause of his fever."

We have already expressed our obligations to Dr Butter, for his zeal in collecting and preserving the cases of which we have given this brief outline; but we cannot give equal praise to the commentary with which they are accompanied, or to the systematic view to which they have given rise. Throughout he appears not as an impartial inquirer, consulting nature with the object of discovering truth, but as a special pleader against the employment of venesection in cases of this description; and it is equally evident, that he has not benefited by the labours of his predecessors so much as he ought to have done. When an author lays claim to originality, he is held responsible for a knowledge of the most recent works, at least in his own language, which have treated of the same or analogous subjects; and although Dr Butter might have been ignorant of Mr James's excellent work,* when he began his inquiries, he would with great advantage have suspended them, until he had perused it with the utmost attention. In like manner, although he makes repeated reference, in terms of approbation, to the Essay of Dr Duncan junior,† yet he altogether overlooks the most important part of it, the determination of the seat and nature of the affection, contenting himself with a most superficial sketch, to which he has given the title of Morbid Anatomy. On the other hand, his pages are filled with a variety of the most irrelevant matter, from the notice of the Western Medical and Chirurgical Society, to the preparation of sulphate of quinine.

We shall without further preamble, proceed to analyze the nature of this affection. Upon this subject Dr Butter's opinions are fluctuating and inconsistent. At one place, he says:—

> "The disease before us has not as yet received any specific appellation by which its nature can be characterized, although it has been assimilated with many." p. 208.

After this, with singular inconsistency, he proceeds:—

> "It was decidedly *erysipelas œdematodes* in Lobb; *erysipelas phlegmonodes* in Cowle, Henwood, Walkie, and Reeves; it might have been called *erysipelas gangrænosum* in Horne, Taylor, and

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* Observations on some of the general principles, and on the particular nature of the different species of Inflammation. London, 1811.

† Edinburgh Medico-Chirurgical Transactions, Vol. I. p. 470.

Quick; *erysipelas erraticum* in Rawling; and *erythema* in Nichols, Butters, Long, and Beer." p. 209.

> "The question is, ought we to call this disease Erysipelas or Erythema, or a mixture of the two, because we have alluded to both? Might we speak of erythematous erysipelas? Was it a new and a peculiar disease, or was it kindred to any other malady heretofore described?
>
> "Authors have enumerated similar symptoms in their descriptions of both erysipelas and erythema, yet it was neither the one nor the other, generally speaking, if we adhere to strict nosological distinctions."

In the preface, generally the part of a book last composed, he delivers his final opinion in favour of his own originality.

> "I might, perhaps, have erred in calling this the '*Dock-Yard Disease*,' but by that appellation it was designated throughout the country; and, therefore, the popular term was retained until the investigation enabled me to apply the technical phraseology of '*irritative fever*.' Before this time, the disease, medically considered, was both nameless and causeless. I have therefore ventured to baptise and to refer it to its true sources."

Now, in opposition to Dr Butter, we maintain that the disease was neither nameless nor causeless. We have already mentioned various names by which it has been distinguished, and when we remind our readers that Dr Duncan junior has enumerated the causes, and described cases arising from 1. venesection; 2. ligature of veins; 3. dissection; 4. inoculation by morbid secretions of living animals; 5. bite of venomous serpents; 6. acrid matters applied directly to the cellular substance; 7. pricks and wounds without the recognised application of any morbid matter; 8. sprains; 9. external violence; and, 10. from less obvious causes, or spontaneously,—they will be as little disposed to admit that this disease was causeless, as that it was nameless.

Whether the names formerly given to it are suitable or not is a different consideration, to which we shall now proceed, by examining the appellation, *irritative fever*, by which Dr Butter has chosen to designate this affection. To us it appears highly objectionable, as conveying no precise idea of the nature of the disease, and being calculated, by its vagueness, to conceal imperfect knowledge.

Dr Butter thinks that the word *fever* should be retained as forming a part of the name of the disease, because "febrile disturbance was the first evidence of the constitution sympathising with the local injury." p. 209. But by nosologists, fever is generally used to express diseases, which, although accompanied with local affections, and even in some measure aggravated by them, are upon the whole idiopathic. We have general fevers, continued, remittent, and intermittent; and although we distinguish peculiar instances by epithets connected with certain organs or regions of the body, as cephalic fever, pulmonary, gastro-enteritic, hepatic, peritonitic fever, &c. we still mean to express that the fever is general, with prominent local affection, the effect, not the cause, of the fever; and we discriminate between these diseases and phrenitis, pneumonia, gastritis, hepatitis, peritonitis, &c. which are inflammations accompanied by symptomatic fever.

"But fever," continues Dr Butter, "may be of many kinds, and, therefore, some diagnostic epithet should clearly distinguish it." p. 209. He then endeavours to show that the words erysipelatous, erythematous, putrid, or inflammatory, cannot be generally employed, and fixes upon *irritative* as that which should characterize this form of disease. We shall, on this point, allow our author to explain himself.

"*Irritation.*—The action of any stimulus applied to a part might be called '*irritation*;' but this action may be of two kinds, 1st simple, 2d specific. With the latter, which refers to small-pox and other specific diseases, we have nothing now to do. When fever follows such simple local excitement as that produced by clean needles, we have reason always to apprehend an unhealthy state of the patient's constitution; but whether this depends on *debility, general irritability,* or a peculiar morbid diathesis, we cannot exactly say. It will be sufficient for our purpose to comprehend the nature, and to understand the effect, of irritation.

"I purpose, therefore, to couple the adjective term, '*irritative,*' which has been adopted by others, as expressive of constitutional disturbance excited by mechanical injuries, devoid of specific virus, and to call the disease, which occurred amongst the artificers in our naval yard, '*Irritative Fever.*'"

We cannot persuade ourselves that we have received any more precise or clear notions from this explanation; but this may be owing to our not comprehending the nature, or understanding the effect of irritation, as contradistinguished from inflammation.* When we look at our author's table of irritants, p. 148, we find an enumeration of all the causes capable of exciting inflammation, and the effect of irritation we conceive to be to excite inflammation. The only distinction we can figure to ourselves, is, that in irritation the nervous system

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* When revising these pages for the press, we have received from Mr Travers a copy of his extensive work just published, entitled, "An Inquiry concerning that disturbed state of the Vital Functions usually denominated Constitutional Irritation;" but we would be acting unjustly towards both the author and ourselves, if we expressed any opinion of its merits, until we have had time to peruse it with that deliberate attention which every production of so distinguished an author deserves.

[illegible] more peculiarly affected, and with less organic change than in cases of exquisite inflammation. But this distinction constitutes only a variety, not a different species of disease.

We shall now proceed to show what the disease really was; and, in the first place, we contend that it was, in the strictest sense, an inflammation. To prevent all cavil, we shall assume Dr Thomson's definition. "The term inflammation has been long employed by medical men to denote the existence of an unusual degree of redness, pain, heat, and swelling, in any of the textures or organs of which the human body is composed." p. [illegible]. Now, each and all of these symptoms were more or less observed in all the Plymouth cases, so far as the texture or organ affected was exposed to the scrutiny of that sense by which it could be recognised. *Redness* cannot be perceived during life, unless the part inflamed be on the surface of the body. We look for redness in the inflammation of the skin, fauces, or eyes, and if we do not perceive it, we are entitled to conclude that these organs are not inflamed; but the redness, which undoubtedly is present when the internal organs and tissues are inflamed, cannot be seen. Even in phlegmon, redness is visible only when the skin becomes implicated or inflamed. Therefore the absence of superficial redness is no proof that no inflammation exists, but only that there is no superficial inflammation. When redness, however, does exist, it is a proof that there is inflammation; and superficial redness, even when slight, often denotes severe inflammation of a subjacent texture or organ. We shall now quote Dr Butter's account of this symptom as it appeared in the Plymouth cases.

> "A transitory blush appeared in Rawling, and quickly flew off. In other patients the redness varied from a pale red to a dark livid colour, like mahogany, sometimes seen in lines, and at others in patches. In Cowle it soon appeared, whilst in Walkie it required time. It was not recognised in Professor Dease until the *6th* or *7th* day, when it led to a discovery of the exciting cause of his fever; but this experienced practitioner even then doubted the connection, after Dr Colles had demonstrated it to him; yet no redness appeared in Dr Bell, because he died before the *6th* day. And it was so evanescent in the woman bitten by a rat, that when I requested Mr Dryden to see the patient with me, the redness had entirely vanished, and the internal organs were more seriously affected. Therefore I think that neither the term '*erysipelatous,*' which literally means creeping, nor '*erythematous,*' denoting a florid patch, at all expresses the character of the redness, which was in Horne fixed and intense, in Rawling remote and transitory, in Nichols generally diffused, and in the Doctor altogether wanting; for though these words designate much in some, they signify nothing in other instances."

There can, therefore, be no doubt, that redness was frequently observed in this disease.

The next symptom of inflammation is *pain*. It is sufficient to quote Dr Butter's account of this symptom, to prove that it existed in an exquisite degree:

> "*Pain*.—The morbid sensations in the diseased parts were so much raised above the natural feeling, that the pain is said to have been most exquisite in many instances. Sensation can only be heightened to a certain pitch, ere intense pain must be converted into its total absence, characteristic of local death. Reeves complained of most acute pain. Dr Pett, of Clapton, who died from a dissection-wound, is said to have remarked that he never before knew what pain was. Sir A. Cooper also mentions, in his lectures, the death of Dr Ludlow, of Calne, from the prick of a thorn when shooting; and the pain which he suffered was most severe."

The third local symptom of inflammation will or will not be perceived, according as an external or internal part is affected. In almost every one of the cases reported by Dr Butter, swelling and tension existed in a very great degree.

The last characteristic symptom of inflammation is heat. This may be felt by the patient as a sensation in the part affected, or it may be perceived by others as an object of sense; but when the pain is exquisite, the patient often overlooks heat, and it is generally omitted to be mentioned in the reports, as being less definite than the other symptoms; but we find heat particularly mentioned in some of the cases. p. 103.

But if the presence of the characteristic local symptoms of inflammation were not sufficient to establish the nature of the disease, the accompanying symptoms and effects are quite conclusive. We shall not dwell upon the state of the fever, nor upon the appearances of the blood, but we must insist upon the abundant production of pus and of sloughs, so frequently observed, as being decisive of the question. Without inflammation, aye and "pure inflammation," pus is never formed.

If any thing could add to the strength of these arguments, we might mention that our author, in describing these cases, has not been able to avoid the constant use of the terms, Inflammation, Erythema, Erysipelas. Thus, in the only case which he saw, he speaks of the pain in the "*inflamed* part of the limb;" he tells us that Mr Dryden made an incision "through the *inflamed* skin and subjacent parts;" and in the history of the first case, we find such expressions as these: "the wound is now inflamed;" "inflammation extending;" "inflammation extended up the leg;" "whole limb much enlarged and erysipelatous;" "erysipelas extending up the thigh;" "erysipelatous tension and tenderness exist over the abdomen." In short, the same language is applied to every case; and to us it appears evident, that, with all his desire to convince others that this disease was not an inflammation, he has not been able to convince himself.

"*Inflammation.*—This word, used practically, may convey a very wrong notion of the disease, and lead to errors most fatal in their consequences. The mere term '*inflammation*' pre-supposes a practice, and induces us to direct means against its progress—hence we say '*antiphlogistic*' measures. Now all redness does not indicate inflammation. A bashful girl blushes, is this inflammation? A frequent pulse does not indicate it, for frequency may be synonymous with weakness, dependant on irritability of mind, and in many instances contra-indicative of inflammation. Rigors and flushings, alternately recurring, show a want of balance in the circulation, and the loss of equilibrium in the sanguiferous system; but they do not denote, for instance in ague, inflammatory action. There may be states of the body as different from inflammation as darkness from light. Gangrene is the reverse of it, and yet we talk of gangrenous inflammation. *

"I think the term '*inflammation*' objectionable, in giving a name to this disease, unless we can imply an uncertain or diffuse redness, with most violent pain, and then erythema might suffice. Furthermore, genuine inflammation, excited by a local provocation, is confined usually to a spot, and condensed into the formation of an abscess, (*phlegmon*); it is neither so transitory in its nature, nor so flashy in its march, as this disease; it is more persevering and steady; it does not leap from part to part, and produce local death; nor does it cease for a time, and recur; nor quit one part without detriment, and set upon another; reciprocally killing and healing.

"Inflammation in general has a defined margin; this had none.† It sometimes ran by continuity of texture through the absorbent vessels and glands, or radiated through the cells of membranes, equally towards the trunk and extremities; whilst at others it leaped from finger to shoulder, without any intermediate or obvious token, from right to left, and from flank to centre. Sometimes it had a fancy to attack successively the bowels, the lungs, or the brain, and to quit them for some part of the extremities, whilst at others it would pass over these organs altogether unnoticed. I would call it a capricious and a rambling disease. These fancies are not illustrative of pure inflammation. Therefore the term '*inflammatory*' would be very improper to couple with a fever of this anomalous type, as it presupposes a theory, and prejudges a questionable line of practice." p. 217.

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* See Morgagni de Causis et Sedibus Morborum, lib. 3. Epistol. 25. arti. 9. Also Pearson's Principles of Surgery, p. 114, &c.

† The reader will find these distinctions, with respect to the disposition of inflammation either to limit or to spread itself, more fully and nosologically laid down in the table annexed to a work on inflammation, by Mr James, Surgeon to the Exeter Hospital, 8vo. p. 328. London, 1821.

I am almost ashamed publicly to confess that I never read this work until I had nearly completed my inquiries on this subject, otherwise I might have availed myself of some useful matter contained in it, when I formed the arrangement of external irritants.—Dr Butter.

Such reasoning needs no refutation. We will concede to our author, that blushing is not inflammation, and that the disease in question was not phlegmon; but, when he tells us that the mere term inflammation "presupposes a theory, and prejudges a questionable line of practice," or "presupposes a practice, and induces us to direct means against it progress," we deny the fact, and reject the argument. If we have proved, as we are satisfied we have done, that the disease had all the characters of inflammation, it must be held to be inflammation, whatever theory or practice it may suggest. The theory may be wrong, and the practice destructive, but the nature of the disease does not depend upon human opinion. The best practice must be discovered by experience, and the theory must be made to coincide with it.

We shall next inquire into the seat of the disease, or the tissue or organ affected; and here we do not hesitate to affirm, that, in every instance, the cellular tissue was chiefly affected. Although the terms Erysipelas, Erypelatous, are often employed in the description of these cases, there is abundant evidence that the skin was not the principal seat of the disease. Our author himself is of this opinion. "Authors have enumerated similar symptoms in their description of both erysipelas and erythema; yet it was neither the one nor the other, generally speaking, if we adhere to strict nosological distinctions." p. 209. But we shall judge for ourselves. When the skin is principally affected, the redness and heat are greater in proportion than the swelling and pain; but in these Plymouth cases, the swelling was often excessive, and the pain agonizing, while the heat was overlooked, and the redness was often trifling or absent. Again, inflammation of the skin, when it does not terminate in resolution, produces vesication, desquamation, ulceration, or superficial gangrene—but these were not conspicuous in the cases described. On the contrary, we had abundant effusion of serum and pus into the cellular tissue, giving rise to obscure fluctuation, swelling, "pitting like dough on pressure;" the discharge of serum and pus from incisions and punctures, and the sloughing of dead cellular substance. The description of the incision in Reeve's case is conclusive, as far as a single case is sufficient. "The divided edges gaped widely, and looked like sliced bacon or brawn. The *epidermis*, *rete mucosum*, and *cutis vera* were thicker, denser, and redder than natural. The cellular substance was distended, and considerably raised above the muscles, by a yellowish, gelatinous, and semi-fluid substance, intermixed here and there with dots of pus, and whitish shreds of slough." p. 104.

Having settled that the disease was inflammatory, and that its seat was the cellular tissue, the point next in importance as to its nosological character, was, whether it had a tendency to limit itself or to spread, a distinction of the utmost importance, and which constitutes the leading feature of the excellent classification of inflammations by Mr James of Exeter. Upon this subject we have as little doubt as on the other; for the peculiar character of the disease, and that which has so long prevented its nature from being understood, was its having no tendency to limit itself, so that it spread more or less rapidly over a greater or smaller portion of the body, and not unfrequently passed from the cellular tissue, in which it commenced, to other tissues, and to the viscera.

The result of our nosological investigation of these cases, therefore, is, that the Irritative fever of Dr Butter, commonly called the Plymouth Dock-yard Disease, was Diffuse Inflammation of the Cellular Tissue.

Upon the exciting causes of this disease, we shall be very short, as we have nothing satisfactory to offer. We here agree with Dr Butter in thinking, that neither teak-wood, nor mineral tar, nor Pering's roofs, nor any other peculiar cause, exclusively excited the disease, and that any irritating cause occasionally sufficed to produce it. We must however admit, that some causes excite it more readily than others. It almost constantly follows the bite of a poisonous animal, and arises more frequently from a puncture received in dissecting a recent body, than from any other puncture. We fear, however, that our knowledge does not extend much farther, and that when we pretend to explain why the same apparently trifling cause produces a fatal disease in one individual, and is quite harmless in many, by saying that the former was highly susceptible, and the others unsusceptible of the morbid action, we merely express the fact by a circumlocution. We may also consider as an inexplicable fact, that the disease is more readily excited in certain seasons than at other times, and that it is more frequent for a time in certain places. In the same degree that we have said it arises from certain causes more frequently than from others, we may say that it arises more frequently in certain places, as hospitals, and in certain seasons, so as to give a semblance of contagion, yet at the same time it occurs not only in private houses in towns, as Dr Duncan's cases prove, but also in the freest country situations, as is proved by Dr Scott's valuable cases.*

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* Edinburgh Medical Journal, Vol. xxiv. p. 226.

On the prognosis our author's observations are quite unsatisfactory, and amount to little more, than that the prognosis is more unfavourable in proportion to the severity of the disease, unless it be that he regards the disposition to wander and slough as the most formidable character of the disease, (p. 221,) in which we agree with him. In this respect the progress of the disease, independently of its severity, sometimes assists us in forming a prognosis. In some instances the disease proceeds uniformly, progressively from the injury, commonly towards the trunk of the body; in other cases its severity is first manifested at some distance, commonly in the loose cellular tissue, in which are situated the lymphatic glands, to which the lymphatic vessels from the injured part lead, and we have always remarked, that the danger in cases of the latter kind, is infinitely greater than in the former. When the disease is continuous, the danger is in proportion to the severity of the local disease; but when it springs from the local injury to the axilla or groin, without affecting the intervening portion of the limb, the danger bears no proportion to the injury, which is often so trifling as to be overlooked altogether, but to the rapidity with which the disease travels from its second station, and to the kind and degree of impression made upon the general system. Its translation to the viscera is almost always fatal.

On the subject of treatment, we might either reason from analogy or appeal to facts; but we fear that neither will serve as a certain guide. We all profess to be guided by experience, but we draw very different conclusions from the same observations. Let us take, for example, that disease, in which most of us of any standing in the profession have had too much experience, the common continued fever of the country, and consider that men equally well instructed, equally careful observers, and equally capable of reasoning, have drawn from the very same facts the most opposite inferences. We speak not of those prejudiced persons, who always run into extremes, but of sober-minded, calculating practitioners; and we find some deprecate venesection, while others confide entirely in the lancet. The explanation is easily found in the variability of the subject, the circumstances of which, principal and accessory, are so infinitely diversified, that the human mind is too limited to embrace them all, and human life too short to inspect them. Of this the father of physic has strongly expressed his conviction: *Ars longa—Vita brevis—Experimentum difficile.*

In regard to the disease now under consideration, the experience of our author is limited to a single case, and is, therefore, of little weight, nor is the experience which he has derived from other sources of much greater value. Notes written from memory, the testimony of widows, and recollection of survivors, may authenticate some points which it is impossible to mistake, but will not serve as grounds for deciding doubtful points of practice, even if they be reported with the utmost impartiality.

There is but one point of practice, which we shall stop to examine, as it is that which is calculated to do most good or harm, according as it is judiciously or injudiciously employed. We allude to the general abstraction of blood; and, in our summary of the cases, we have retained the effects observed from it nearly in the words of our author, certainly without changing their import. The general result is, that of fifteen patients, thirteen were bled, and of these thirteen, twelve ultimately died, and only one recovered; while, on the contrary, of the two not bled, one recovered, and one died. At first view, the inference is decidedly against the utility of venesection, and would prove it to be highly injurious; but it goes too far, and leads us to suspect that the data are not correct. In fact, the cases are much too few, especially of those not bled, to serve as the basis of any conclusion; besides, it is fair to suppose, that as blood-letting was employed in so large a proportion of the cases, thirteen out of fifteen, those in whom it was omitted were less severe, and did not call so urgently for active measures' Again, blood-letting was not the only means of great power resorted to, and the accessory measures, such as incisions, must be taken into account, as their employment or omission could not fail to influence the result. Looking to the cases individually, venesection, although unable to save the patient, seems frequently to have mitigated the symptoms, and checked for a time, though ineffectually, the progress of the disease. This is admitted by our author himself, who says, "Venesection made no effectual check to the disease in any one instance, but still afforded delusive hopes with some patients," p. 248; and we will readily concede to our author, "that venesection *alone* is not the remedy for this disease," p. 250; nor, we will add, is any thing else, not even incisions as soon as effusion has taken place, according to the recommendation of O'Halloran and Hutchinson,—a practice of which we have so high an opinion, that we think its omission a positive fault. But venesection is not incompatible with incision, and the question returns, whether it improves or diminishes the chance of the patient. We have unfortunately seen too much of this dreadful malady not to know that, in many cases, as soon as it is established, the fate of the patient is determined, and the impotency of human means made manifest. But we are not on that account to abandon the patient to his fate, but are the more called on to try whatever may excite hope, even though it should prove delusive. *Anceps remedium melius quam nullum.*

So far as these cases are to add to our experience, we find that *Long*, who died in two days after the disease manifested itself, was not bled; and although we would not insinuate, in the most distant manner, that his life could have been saved, or even prolonged by abstraction of blood, this case serves to show, in how very short a time the disease, when left to itself, was capable of proving fatal. *Bate*, *Walkie*, *Taylor*, *Beer*, and *Dr Bell*, died five days after the attack, Dr Bell with pain of pectoral, scapular and lumbar region, Bate and Walkie of abdominal inflammation. This translation was also the immediate cause of death in *Nichols*, who survived six days, and in none of these cases did venesection seem to be of any use. But we feel confident that it did no harm, and that no other treatment would have been more successful, as incisions were in these cases out of the question. *Rawling* and *Quick* died on the sixth day with more severe local affection. In Rawling there was a mitigation of the disease after venesection, and an incision into the affected limb might have done good. The report of Quick's case by Dr Butter is exceedingly imperfect, but it is given minutely by Mr Tripe, who attended him, and who says "The bleeding gave the disease the only check it received; the symptoms were all immediately reduced by it, and continued in abeyance during that and the following day." *Lamb* died on the 15th day, with the limb much affected. He also felt relief from venesection, and incisions were omitted. *Horne* in like manner died on the 15th day, with much affection of the limb. The disease was suspended for two days after the first venesection of 20 ounces, and again relieved after the third of 24 ounces. It may be questioned whether the event of the case might not have been different, if a larger quantity of blood had been drawn at the first, and incisions made sooner and more freely. *Henwood* survived 67 or 68 days, and died at last of exhaustion and sphacelus, from pressure on the sacrum, thigh and heel. The history of this case is strongly in favour of the propriety of venesection; 34 ounces were taken on the second day with the effect of removing the fever entirely, for nearly a month, and reducing the case to one of a succession of abscesses; and the only thing to be regretted in the treatment is, that fear of debility should have deterred Dr Bell from making incisions into the thigh on the 7th September when fluctuation was perceived in it.

We may conclude this analysis of these individual cases with Dr Butter's own words. "So much for experience; next, what do authorities say upon this subject." Dr Colles has not expressed himself decidedly; Dr Duncan junior recommends venesection.

Mr Abernethy, in concluding with the trite quotation, "*brevis esse laboro, obscurus fio*," has anticipated our judgment of his letter on this subject to Dr Butter. He is afraid of vensection, for it does not appear that he has any experience of it. "With respect to bloodletting, I may add, that I do not think we are warranted to bleed in cases of irritative fever, because these maladies are indicative of weakness, and likely to induce, as a consequence, a greatly augmented debility," p. 207. Sir Astley Cooper, in recommending local bloodletting as highly useful, and enjoining the abstinence from all stimulants, as they do harm, does all but recommend venesection.

Dr Butter lays much stress upon Dr A. T. Thomson's case, and the observations of Mr Shaw. With regard to Dr Thomson's case, we are persuaded that, from a laudable principle of gratitude, he has been led greatly to overrate the effects of the treatment prescribed by Dr Granville, and we cannot agree with him in considering his recovery as decisive of the beneficial effects of the stimulating plan in the first instance, followed by active purgation. In the first place, the case did not at all follow the course of the malignant form of the disease; and, secondly, the means employed were altogether inadequate to make a powerful impression on any disease, which otherwise would have had a fatal termination. Dr Thomson had a very severe accession of fever after pricking his finger in dissection, but on the fifth day was able to sit up for a few hours, and to take a little nourishment, and on the sixth he considered himself out of danger. It was not until this period, that the local affection, which had hitherto given him but little uneasiness, became somewhat severe; but it soon yielded to appropriate treatment, and in ten days he was able to renew his professional avocations, although the debility induced lasted some weeks. The stimulating treatment consisted in two doses of camphor, ammonia, and wine of colchicum, on the second day; and in the evening, of two boluses containing each 3 grains of camphor, and 4 of cayenne pepper, which were perhaps repeated although not distinctly stated, followed by active purgatives. No one who has ever seen a fatal case of this disease, will for a moment admit that it could have been cured by a few grains of camphor and cayenne pepper.

The subject has been examined with great candour and diligence by Mr Shaw,* who is a decided enemy, not only to venesection, but to the local abstraction of blood, and recommends the stimulating treatment; but although this respectable surgeon seems to have had much experience in what we have called the progressive form of the disease, there is no evidence that he has met with that malignant form which so commonly proves fatal. His objections to the detraction of blood arise entirely from the fear of reducing the vital energies of the patient, and an opinion that, however evidently the symptoms may otherwise indicate it, bloodletting is destructive when a person is suffering under a poison. But however highly we may estimate the authority of Mr Shaw, yet when he does not speak from experience, we cannot relinquish an opinion which we consider to be derived from accurate observation and sound induction, because he entertains a different opinion. We refer to the case of Mr Forbes, inserted in the present number, as evidence in favour of the good effects of leeching; and we are indebted to the attention of Dr Aitken, for an opportunity of seeing one of his pupils now recovering from a malignant attack, after having been bled very profusely; while we may refer to a case we have just met with in Mr Travers's Inquiry, p. 518, in which the patient died on the eleventh day, who had only leeches applied, and was freely stimulated with opium, carbonate and acetate of ammonia, camphor mixture, nitric ether, sulphate of quinine, and wine.

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* Lond. Medical and Physical Journal, May 1825.

When our stock of facts is so limited, as it is in this disease, and the results are not uniform, inferences drawn from analogy, or general principles, are of greater value; and these, we apprehend, are decidedly in favour of the depletory practice. This seems not to have escaped the sagacity of our author, and, if we are not mistaken, this furnishes an explanation for his heterodox opinion concerning the nature of this disease, and all the inconsistencies of his writing about it and about it. "The mere term *inflammation* presupposes a practice, and induces us to direct means against its progress; hence we say *antiphlogistic* measures." But our author labours to show that antiphlogistic measures were useless, if not hurtful, in this disease —*ergo*, this disease was not an inflammation. To this most logical conclusion, we cannot however, consent, because, in the *first* place, inflammation does not presuppose, with all practitioners, the employment of antiphlogistic measures. Systematic writers admit of asthenic and typhoid inflammations, and these appellations presuppose a practice the reverse of that employed for the cure of sthenic or synochal inflammation; and while erysipelas is universally considered to be an inflammation, very few of the practitioners of the London school treat it on purely antiphlogistic principles. *Secondly*, we contend, so far as experience goes, that it is not against the antiphlogistic practice; and *lastly*, we maintain, that whatever treatment may prove serviceable or hurtful, we have demonstrated that the disease was an inflammation having no tendency to limit itself, and seated in the cellular tissue.

We shall assume this as a point made out, and now proceed to consider if analogy, or general principles, furnish any inferences as to its treatment. We will admit, that in many of the cases, the accompanying fever was typhoid, and too frequently of the worst description, entitled to the epithet of malignant. But very extensive experience has satisfied us of the safety and utility of antiphlogistic measures duly employed, in general typhous fever, as well as in typhoid inflammations of all the viscera; and, by analogy, we have been led to use, and we have never repented our having used, these measures in typhoid inflammations of the cellular tissue of the limbs. We admit that they are not always successful, because there are cases which no practice will save; but, we contend, that the severity of many cases is owing to the omission or procrastination of decisive measures, or their timid employment. We conceive that there is a very general error prevailing in regard to the nature of malignancy in disease, as if it were always a state of extreme depression; but, although this may happen on some occasions, we shall find, on accurate examination, that most cases of malignancy are cases of indirect debility,—cases of exhaustion, in consequence of preceding over-excitement; and if this be so, the most rational means of preventing malignancy is to prevent or moderate the excitement. In malignant sore throat, the sloughing of the mucous membrane is preceded by its violent inflammation; in puerperal fever the abdomen is filled with sero-purulent effusion, the unequivocal character of preceding inflammation. But if we are satisfied, when the excitement first begins, that it will prove violent, and that it is likely to produce the worst consequences, is there any mode of proceeding so rational as attempting to moderate the excitement,—and how is this to be done most rationally? We answer, by the same means which universal experience has shown to be successful in severe inflammations in general, when we do not anticipate gangrene or fatal effusion. If it be replied that they do not succeed in these malignant cases, we contend, that it is because they cannot be carried far enough before the fatal exhaustion take place; but, surely, a more successful termination is not to be anticipated from general artificial stimulation, unless, by this means, we should excite an incompatible disease. We shall put the case in another point of view. In slight inflammations, antiphlogistic measures may not be necessary, and a very slight degree of them will suffice; in severe inflammations they are absolutely necessary, and, by their energetic employment, often prove successful; and in very severe inflammations, is it not more rational to employ the same means with still greater promptitude and vigour, than to reverse the practice and add fuel to the fire?

We shall conclude this article with a summary of the practical rules for the treatment of this dangerous form of disease.

1. If we are aware of the introduction of a poison which we suspect to be capable of producing it, we must immediately use the most likely means to remove it, or prevent its action,—by sucking the wound with the mouth, or, when they are applicable, by suction with cupping-glasses;—by applying a ligature above the wound as tightly, and for as great a length of time as it can be borne;—and by decomposing the poison and killing the part to which it is applied, by caustics, such as potass, lime, ammonia, the concentrated acids, muriate of antimony, nitrate of silver, powder of cantharides, alcohol, or the actual cautery.

2. Should these means prove ineffectual in preventing the action of the poison on the system, the disease requires very different general treatment in its different stages. We may consider these as three in number. In the first stage, there is great depression of the vital powers; in the second, high excitement; and in the third, extreme exhaustion. The degree of each of these seems to depend upon the severity of that which has preceded it, so that the danger from exhaustion will be less in proportion as we succeed in moderating the excitement; and the degree of excitement will be less in proportion as we counteract the primary depression.

(*a*) In the first stage, the free use of the most diffusible stimuli, as alcohol, ammonia, and perhaps opium, is indicated; while venesection, cold, and the depressing powers generally are contra-indicated. This part of the practice is exemplified in the most approved treatment of the bite of the rattlesnake and cobra de capello.

(*b*) In the second stage, on the contrary, venesection, local bleeding, depletion, and the strictest antiphlogistic regimen in general are indicated; while all stimuli, except heat as a relaxing power and contra-stimulation, as derivative, are contra-indicated; in the same manner as we would treat extensive inflammation proceeding from any cause whatever.

(*c*) In the third stage, the treatment is the same with that adapted to cases of extensive suppuration, deposition, or gangrene. The system, in general, will require to be supported by light and nutritious diet; and stimuli and tonics may be exhibited according to circumstances.

3. The treatment of the local affection must also be adapted to its various stages.

(*a*) Our first efforts must be directed against its disposition to spread, in which its peculiarity and danger consist. This is to be attempted by the general treatment already pointed out, and by exciting a more intense action in the part first affected, with a view of concentrating the inflammation to a limited space.

(*b*) As soon as effusion, deposition, or suppuration has taken place, the peculiarity of the disease is in a great measure at an end; and when we cannot remove the deposited matter by absorption, which is rarely the case, the most important part of the treatment consists in free punctures and incisions into those parts where we suspect the presence of a fluid, so as to give it a free outlet.

(*c*) After suppuration or gangrene is established, the treatment is to be directed according to the established principles of surgery in similar affections in general.

ART. II.—*Philosophical Transactions of the Royal Society of London, for the year* 1825. *Physiological and Anatomical Papers.*

THIS volume of the Philosophical Transactions contains few papers of much importance on medical subjects. The first we shall notice, is one by Sir Everard Home, entitled,

Observations on the changes the ovum of the Frog undergoes during the formation of the Tadpole.—In this paper the author shows that the progress of the ovum of the frog is very similar to that of the fowl. In the ovaries the ova are mere vesicles, which, after entering the oviducts, become somewhat larger, acquire a gelatinous coat, and gradually pass down into a reservoir situate near the external opening, and similar to the *cloaca* of the fowl. They are then in a state fit for impregnation. The first change after impregnation is, that the contents, which are at first quite fluid, become coagulated. The central part then becomes whiter, swells out, and divides into two portions. This central part forms subsequently the brain and spinal chord; and the heart and other viscera are formed out of the darker part of the ovum. In thirty-six hours the head of the tadpole is distinguishable from the tail. In three days muscular motion may be perceived; and in five days the ova separate, and the tadpole begins to extricate itself from the ovum.

The paper is accompanied with several beautiful plates, showing the progress of the ovum from its formation in the ovaries, till it becomes a tadpole twelve days old.

The next paper, *on the Influence of Nerves and Ganglions in producing Animal Heat,* is likewise by Sir Everard Home. Its object is to prove that animal heat depends on the ganglionic nerves.

When the nervous system, says he, is exceedingly simple and destitute of ganglia, the animal does not possess the power of producing animal heat at all. Thus in the oyster, in which the nervous system consists of two rounded bodies connected together by two nerves, the temperature is never higher than that of the medium where it is placed. In the same manner the garden snail, which has a similar nervous system, and likewise branches going to different parts of the body, but still no ganglia, connot raise its temperature above that of the air. But in the leech, earth-worm, and all insects, there is a double nerve running down the whole length of the body, and united at regular intervals, so as to form ganglia; and in all such animals the temperature exceeds that of the air, if the latter is lower than 56°. In fishes the ganglions are more numerous, but still much fewer than in birds and animals: In the skate, according to the dissections of Mr Cæsar Hawkins, the ganglions do not amount to one-sixth part of those in the bird. Accordingly, Sir Everard found, that, when the temperature of the water was 36°, the warmest part of the skate was 40°. It is a curious fact, somewhat in confirmation of these views, that the electric torpedo and eel, although supplied with a much greater number of nerves than other fishes, do not possess a greater power of producing animal heat, for the nerves of their electric apparatus are not ganglionated

Another way in which Sir Everard endeavours to prove his theory, is, by dividing the ganglionic nerves which supply insulated parts in the perfect animals. For this purpose he chose the horn of the deer when it is beginning to shoot. Having previously ascertained what nerves supply the velvet of the horn, and that they were two branches of the fifth pair, he had them divided where they emerge on leaving the great ganglion; The temperature was observed by a thermometer placed in a hole which had been bored quite through the horn; and it was likewise observed in the same way, at an equal distance from the tip of the other horn, whose nerves were left entire. The following table exhibits the results, the first observation being made an hour after the nerves were cut.

	Atmosphere.	Unnerved Horn.	Uninjured Horn.
1st Day,	66	72	84
2d,	64	69	95
3d,	64	67	84
4th,	64	76	84
5th,	67	87	90

In 48 hours, the temperature was only 3° above that of the atmosphere, and 17° under that of the other horn. In five days the effect of the operation had ceased, *probably*, says Sir Everard, by some other connection being formed betwixt the nerves of the head and horn, because the divided nerves were found not to have united again. This experiment is ingenious, but far from satisfactory. The temperature of the horn operated on, should have been determined before the experiment;

and the *probability* of some other nervous connection having been formed should have been proved, before the author ventured so summarily to impute to that cause the restoration of the heat.

The next argument in support of his theory is drawn from some experiments, which tend to show, that when the nerves of a part become enlarged, the power of producing animal heat is augmented. To ascertain this point the womb was selected; and Sir Everard says he was led to try it, because he found the oviduct of a frog ready to spawn two degrees hotter than that of the heart. On inquiring among his medical friends, he found that some of them, in turning the child in the uterus, had felt the heat greater than the hand could well bear; and this observation was subsequently confirmed by some experiments made for him by Dr Granville. In a natural labour of three hours duration, the heat of the uterus before delivery was 108°, after delivery 105°. In a labour that lasted 38 hours, and was finished with the aid of the forceps, the heat of the uterus, observed twice during labour, was 118° and 120°, and after delivery 110°. And in another that lasted 40 hours, the heat after delivery was 115°, so that before delivery it was probably above 120°. These are certainly very extraordinary facts, so extraordinary indeed, that, although Sir Everard says every necessary precaution was taken to ensure accuracy, and the observations assuredly appear of easy enough execution, we must be excused for suspending our belief, till they are confirmed by other experimenters. We have inquired among our accoucheur acquaintances here, and none of them ever remarked the intolerable heat which Sir Everard says his friends have felt in the uterus.

It is hardly possible to express a distinct opinion on these views of Sir Everard. The facts he has published are valuable additions to the interesting researches of Mr Brodie, and the still more satisfactory experiments of Despretz; from which it appears that the heat derived from the chemical changes caused during the process of respiration, is not nearly sufficient to account for that discharged from the whole body; and consequently that the nervous system is somehow concerned in supporting animal temperature. But that the few experiments and observations contained in this paper are sufficient to prove so important a doctrine, as that the ganglionic nerves are alone concerned in the production of heat, we will distinctly deny. Sir Everard, in short, has composed the paper in his usual rambling vein,—startling the world with an extraordinary doctrine, of which all that can be said, is, that it is not impossible,—and leaving to those who may think it worth their while, to refute or substantiate it.

An Essay on Egyptian Mummies, with observations on the Art of Embalming among the Ancient Egyptians.—This is an account by Dr Granville of the dissection of the most perfect mummy which has hitherto been brought to Europe, and sacrificed to the curiosity of the anatomist. The paper contains a great deal of information on every subject connected with the embalming of mummies; but we must confine our attention to those parts which relate strictly to medicine.

It appears that the ancient embalmers were well acquainted with the methods practised by the ancient and modern surgeons in applying bandages. "There is no species of bandage," says Dr Granville, "which ancient or modern surgery has devised, described, or employed, that did not appear to have been used in securing the surface of the mummy from the external air." "We here met with the *couvre-chef*, the *scapularium*, the eighteen-tailed bandage, the T bandage, as well as the *linteum scissum* and *capistrum*;" and "they were applied with a neatness and precision that would baffle the imitative power of the most adroit surgeon of the present day."

The subject was a female, as the external parts of generation, though shrivelled, were readily recognised; and the mammæ, which extended as low down as the seventh rib, even showed distinctly the areolæ and nipples. The surface of the body was quite dry, and of a deep brownish black colour; and on the inside of the thighs, and other parts where the larger muscles lie, it was soft, and yielded to the touch. The cuticle was wanting every where, except at the points of the toes and fingers.

The dimensions and form of the body approach very nearly to the beau ideal of the Caucasan or European race, being nearly the same with those of the Medicean Venus. It is particularly to be remarked, that the pelvis is deep and ample, even more so than that of European females in general; and that the facial angle of the head is very nearly a right angle. These facts agree with the inferences drawn by Cuvier, from the examination of the heads of various mummies, with regard to the origin of the ancient Egyptians, namely, that they belonged to the Caucasan race, and are quite at variance with the opinion of Blumenbach, that the Egyptian form is the type of a variety of the Ethiopian race.

On laying open the cavity of the abdomen, it was found that most of the organs still remained in it. The liver, however, and one of the kidneys, as well as the greater part of the intestines, could not be discovered. The bladder, uterus, and its appendages, were evidently much diseased. The organs of the chest were all in their places. The brain and its membranes had been removed through the nostrils. The eyes had not been disturbed.

The muscles were in a state of singular preservation, so that it was as easy to separate them by dissection, as in a recent subject. The articular ligaments were also pliant, so that it was easy to give the great joint of the thigh all its movements.

Dr Granville supposes the age of the female to have been between fifty and fifty-five, because, while there were no signs of decrepitude on the body, the flat parts of the ossa ilii were thinned away, as in women of that age who have borne many children.

It was clear that she had died of diseased ovary; for the skin of the belly was covered with wrinkles and folds; "the ovarium and broad ligament of the right side were enveloped in a mass of diseased structure, while the Fallopian tube of the same side was perfectly sound, and beautifully preserved;" and there were the remains of a contracted sac, which had evidently been of great size.

The results of Dr Granville's chemical examination of the substances with which the body and the bandages were impregnated, and of some experiments he made to imitate the Egyptian mode of embalming, is, that after the brain was drawn out from the skull through the nostrils, and the intestines by the anus, the cuticle was removed with quick-lime, and the whole body immersed for several days in a mixture of bees-wax and resin kept in a melted state, till every part was thoroughly impregnated with it;—that it was next immersed in a saline solution containing nitre, subcarbonate of soda, muriate of soda, sulphate of soda and a little lime, being probably the water of the Natron lakes concentrated by evaporation; that the integuments were then tanned by a decoction of some strong vegetable astringent; and that the bandages used for protecting the body from the air were steeped in the same decoction. By following this process, Dr Granville converted the body of a still-born child into a very exact representation of an Egyptian mummy. It has been kept three years without a covering of any sort, and has not given the slightest appearance of decay. It is remarkable, that, when the saline and waxy matters were removed from a part of the Egyptian mummy, the muscles and other parts acquired very nearly the appearance of the same parts in a recent subject, and putrefied in a few days in the usual manner.

Microscopical Observations on the materials of the Brain, and of the Ova of Animals, to show the analogy that exists between them, by Sir Everard Home.

We confess we are at a loss to trace the analogy here announced. But the subject of the paper gives Sir Everard an opportunity of introducing an experiment of some little interest on the effects of cold on animal life. Some time ago, at the request of John Hunter, he subjected fresh blood to a freezing temperature; and found, that, although it was cooled even to consolidation, yet, if slowly thawed, it coagulated like recent blood. Hence, Mr Hunter concluded, that, as the principle of life resided in blood, no change was to be expected to arise from the action of cold on any other part of the body. Whatever may be the fact as to the ground of this inference, namely, that the principle of life resides in the blood, there can be no doubt, from the more recent experiments of Sir Everard, that at least one part of the body is completely disorganized by freezing. For he found, that if a frog was immersed in a freezing mixture for a sufficient time to freeze the brain, not only life was irrevocably extinguished, but likewise, however gradually the brain was thawed, it was converted into a watery fluid with some gelatinous matter. When the human brain is frozen, and then allowed to thaw gradually, a quantity of watery fluid separates, amounting to one-fifth of the whole.

Sir Everard infers, from these experiments, that in cases of suspended animation from cold, we can never hope to restore life if the cold has been lasting or intense enough to freeze the brain! There was no need of an experiment to satisfy the world of that.

Art. III.—*Versuche über die Wirkungen, &c.*

Experiments on the Effects of Baryta, Strontia, Chrome, Molybdenum, Tungstene, Tellurium, Titanium, Osmium, Platinum, Iridium, Rhodium, Palladium, Nickel, Cobalt, Uranium, Cerium, Iron and Manganese, on the Animal System. By C. G. Gmelin, Professor of Chemistry at the University of Tubingen. 1824.

This treatise is intended to supply the deficiencies existing in our knowledge of the poisonous properties of the metals, and so to inform the physician what are deleterious and what are not, and to enable the toxicologist to complete the classification of the metallic poisons. The author introduces it with some remarks on the kind of inferences we are entitled to draw from experiments on animals. He is of opinion, that we can never acquire, in this way, any knowledge of the effects arising from the gradual introduction of poisons into the body, and still less of their therapeutic properties, if we except a knowledge of the organs on which they more particularly act, and of the precautions to be followed in prescribing them;—that we seldom learn much more than the peculiar toxicological effect of each, the circumstances under which it causes death, its degree of energy, and the morbid appearances it causes in the body;—that, if we abstract the differences depending upon differences in dose, the general results must, on the whole, be pretty uniform with all poisons, at least as to their ultimate effects, since most of them cause inflammation where they are applied. The last clause of this sentence contains a proposition to which the toxicologist will not readily assent; for assuredly experiments on animals have enabled us to classify the general effects of poisons satisfactorily enough, and to form various orders that are sufficiently characteristic and distinct.

The animals he has preferred for his experiments are the dog and the rabbit. By means of the former he ascertained the effects of each poison when swallowed, when applied to the cellular tissue, and when injected into the veins. But as this animal vomits with great facility, so as to escape the action of the poisons by discharging them; and as he could not prevail on himself to tie the gullet in the way recommended by Orfila, he determined their morbid appearances by means of the rabbit, which does not vomit.

The experiments seem to have been conducted with great care; yet some of his results are at variance with the best established doctrines in toxicology.

1. *Baryta.*—His experiments with the salts of baryta agree with those already made by Orfila and Brodie. The salts which are soluble in water or the acids, namely the muriate, nitrate, and carbonate, produce slight inflammation of the stomach, but act chiefly on the brain, spine, and voluntary muscles. The voluntary muscles are found, immediately after death, to have lost their contractility; but the heart continues to contract vigorously for many minutes, even without the application of stimuli. This, we believe, is a new fact in toxicology. The heart, however, is affected during life; for its pulsations become frequent, feeble, and at length almost imperceptible. The sulphate, being insoluble even in acids, has no effect at all on the economy.

2. *Strontia.*—From the close resemblance which exists between this and the former earth, it was natural to expect a corresponding resemblance in physiological property. But, on the

contrary, Gmelin has found that it is hardly a poison at all. The same fact had been long before observed by Pelletier of Paris, and experiments to the same effect have been also made by Blumenbach. Gmelin's, however, are more detailed and complete. It required half an ounce of the muriate to kill a rabbit; and death appeared to have been caused by inflammation of the stomach. Two drachms had no effect whatever when introduced into the stomach. Ten grains, dissolved into two scruples of water, had as little effect when injected into the jugular vein of a middle-sized dog.—The carbonate is equally inert. Two drachms had no effect on a rabbit.—The nitrate is likewise inactive. Two drachms, given to a rabbit, dissolved in an ounce and a half of water, increased the frequency and hardness of the pulse, and caused a brisk diarrhœa; but the animal ate three quarters of an hour afterwards, and soon got quite well again. It was killed next morning; and the contractions of the heart and peristaltic motions of the intestines were particularly active. This experiment is at variance with the general idea, that all the nitrates retain so far the properties of their acid, as to be powerful and fatal irritants.

3. *Chrome.*—As this metal is now very much used in the arts, it is important that its properties be thoroughly known. Gmelin's experiments are numerous and satisfactory. When it is injected into the veins in minute quantities, as in the dose of one grain of the chromate of potass, it has no effect. Four grains, however, caused constant vomiting; and the animal, a terrier, died in six days, without any other distinct symptom but weakness, particularly of the hind-legs, and without any morbid appearance being obvious after death. Ten grains caused instant death, by suddenly stopping the action of the heart; for, when the body was opened immediately, that organ was found to be no longer irritable, except in its right auricle, and the left cavities contained arterial blood. The other muscles, voluntary and involuntary, retained their contractility. When introduced under the skin, its effects are very singular. A drachm of the chromate of potass was introduced in the state of powder, under the skin of the neck of a strong dog. The first symptoms were weariness and a disinclination to eat; on the second day, vomiting, and the secretion of a purulent mucus from the conjunctiva of the eyes; on the third day, great thirst, emaciation, paraplegia, and staggering in its gait; on the fourth, difficulty of breathing and swallowing; and death took place on the sixth day. The irritability of the muscles ceased with death, the heart beat very feebly, but the peristaltic motions of the intestines were vigorous. The larynx, bronchi, and small bronchial tubes, contained fragments and strings of fibrinous-

like mucus; the nose was full of similar matter; and the conjunctiva of the eyes was covered with purulent mucus. The stomach and duodenum were speckled with extravasated blood. The wound was dry, and very little inflamed. In another instance, an exanthematic eruption broke out on the back, and the hair of the part fell off. When swallowed, the salts of chrome cause inflammation, but not of a violent kind. The chromates are more energetic than the salts in which the metal exists in the state of a protoxide.

To these singular facts we may add another not less so, which has been observed by the workmen in Glasgow, who use the bi-chromate of potass in the art of dyeing. When this salt was first introduced into the art of dyeing, the workmen, who used to have their hands frequently immersed in its solution, were attacked with troublesome sores over the parts which were touched with it; and the sores gradually pierced deeper and deeper, without extending laterally, till they sometimes actually made their way through the arm or hand altogether.

4. *Molybdenum.*—The molybdate of ammonia, when introduced into the stomach of the rabbit, in the dose of half a drachm, causes depressed action of the heart, occasionally strong convulsions before death, and in dogs, at times diarrhœa. The irritability of the voluntary muscles, heart, and intestines, is not impaired. When injected into the jugular vein of a dog, in the dose of ten grains, it caused vomiting and diarrhœa, afterwards weakness and stiffness of the hind-legs, weariness, and staggering; in five days it began to recover, and finally got quite well; but the hind-legs continued stiff for almost a fortnight. Gmelin thinks the acid is deoxidized when taken into the stomach, as its villous coat was found after death tinged of an azure-blue colour.

5. *Tungstene.*—This has very little energy as a poison, and as such may by classed with iron. The tungstate of ammonia was given to the same dog in the successive doses of 3, 12, and 60 grains; but it produced no effect, not even vomiting. The tungstate of soda caused some vomiting. When injected in solution into the jugular vein in the dose of ten grains, it had no effect at all in one instance, and merely caused some vomiting and diarrhœa in another. The salts of this metal, however, are fatal to rabbits, if given in large quantities; they die in convulsions, and some inflammation is found in the stomach after death.

6. *Tellurium.*—The author had not a sufficient quantity of this metal to make a complete set of experiments. Ten grains of the oxide killed a rabbit in ten days, without causing any particular symptom. The villous coat of the stomach was found

partly detached, and the rest of it easily separable, but there was not any inflammation. The contents of the stomach and intestines, as well as the cavity of the peritoneum, had a garlick or radish odour, like that of metallic tellurium; whence Gmelin imagines the oxide was reduced.

7. *Titanium.*—This metal is probably, like iron and tungstene, quite innocuous. A drachm of titanic acid was swallowed by a dog, but produced no effect whatever, not even vomiting.

8. *Osmium.*—This is an active poison. In animals that vomit, it causes immediate, violent, and long-continued vomiting, when given in the form of muriate, even in very small doses. It kills rabbits without causing any particular symptom, except palsy of the hind-legs; and appears to act as a corrosive and irritant, for the stomach, intestines, and œsophagus, were black, rough, and hard on the inside, owing to a reduction of the salt by the animal matter. When injected into the veins in small doses it has no effect; but a solution containing 1⅓ grain of metallic osmium killed a dog in an hour, causing occasional vomiting, weariness, difficult breathing, and slight convulsions; and it appears then to act on the irritability of the heart; for when examined, immediately after death, it was found to contract feebly under stimuli, and to contain arterial blood in its left cavities. We cannot conceive why, with these facts before him, our author considers the preparations of this metal to be not very poisonous.

9. *Platinum.*—The muriate of platinum kills dogs in the dose of 12 grains; probably by causing inflammation of the stomach and intestines. The inflammation is very violent, both in them and in rabbits. It has the same effect when injected into the veins. Six grains of the neutral muriate caused at first strong convulsions, then frequent bloody diarrhœa, vomiting of tough mucus, frequent breathing, lameness of the hind-legs, great depression, and death in twenty-two hours. The whole stomach and intestines, and the urinary bladder, were much contracted, and violently inflamed. It is an extraordinary fact, however, that these effects do not follow its application to the cellular tissue. Two drachms of the muriate of platinum and ammonia were introduced into a wound in the neck, but had no effect on the general system or remote organs. The two first experiments on the stomach and jugular vein would associate this poison with arsenic; but its effect on the cellular tissue is quite different, and, indeed, is altogether at variance with what we should have expected upon toxicological principles.

10. *Iridium.*—The salts of iridium produce vomiting and diarrhœa in dogs, and in rabbits cause death apparently through

inflammation. When six grains of the muriate were injected into the jugular vein of a dog, no effect was produced for twenty-four minutes; but the animal then suddenly cried out, and fell, and died four minutes afterwards. The body being opened immediately, the heart was found no longer irritable, and its left cavities contained florid blood.

11. *Rhodium.*—The only salt of this metal which our author tried, the double muriate of soda and rhodium, does not appear to be very poisonous. Fifteen grains had no effect on a rabbit; and ten grains injected into the jugular vein produced great prostration, from which the animal recovered; and it died in five days without any particular symptom.

12. *Palladium.*—The muriate of palladium is an active poison. Three grains injected into the jugular vein of a dog, killed it within a minute, by destroying the irritability of the heart, and causing partial coagulation of the blood. A few grains taken into the stomach cause vomiting, diarrhœa, and weariness in dogs. In rabbits it causes no peculiar symptom but anorexia, and death takes place in three days from general and violent inflammation of the stomach. Its villous coat was thickened, greyish-brown, brittle, and raised by an infiltration of bloody serum beneath it.

13. *Nickel.*—The sulphate of nickel does not appear to be active. When twenty grains were given to a dog, no effect was produced, except weariness and vomiting, although the salt was retained two hours. Twenty grains, however, killed a rabbit, by causing convulsions. Ten grains injected into the jugular vein killed a dog immediately, by exhausting the irritability of the heart. Five grains produced some vomiting and diarrhœa, great weakness and weariness, afterwards imperfect paraplegia and weakness of the heart's action; but the animal gradually recovered, and was quite well again in six days. This salt, like those of platinum, has no effect when injected into the cellular tissue. Half a drachm and forty grains had hardly any effect whatever; yet the whole of the salt was absorbed.

14. *Cobalt.*—This metal is allied to nickel in its action on the system. But it is more active when injected into a vein, and consequently likewise when introduced into the cellular tissue. Thirty grains of the muriate killed a rabbit within a day, when swallowed. Twenty-four grains introduced under the skin caused frequent vomiting; but the animal recovered. In one of the experiments, a volvulus of the ileum was formed, which caused fatal inflammation.

15. *Uranium.*—The nitrate of uranium is a feeble poison. Fifteen grains had no effect on a dog; a drachm merely caused

vomiting after more than an hour's interval. Thirty-four grains killed a rabbit in fifty-two hours, by exciting inflammation. Three grains injected into the jugular vein caused instant death, by exhausting the irritability of the heart, and causing a peculiar coagulation of the blood.

16. *Cerium.*—The salt used for ascertaining the effects of this metal, was the muriate of the protoxide. It does not appear to possess much activity. A drachm caused no inconvenience to a dog; it did not even excite vomiting; and thirty grains had as little effect on a rabbit. When injected into the veins, however, it causes immediate death by acting on the heart. Gmelin indeed thinks it acts neither on the blood nor on the irritability of the heart; because the former was fluid immediately after death, and the latter contracted vigorously for a long time afterwards; and he infers that it must act on the brain. There was no symptom, however, of such an action; and that the heart was acted on, notwithstanding its contractions after death, is evident from florid blood being contained in the left cavities.

17. *Iron.*—Gmelin's experiments lead to the same inference as that to which physicians have long ago and invariably been led from the observation of its effects on man;—namely, that its compounds are the least poisonous of all the metallic salts. Orfila has given, in the second edition of his Toxicologie, some experiments made by himself, in company with Dr Smith, from which he inferred, that the sulphate of iron is a poison to dogs when introduced either by the stomach, the cellular tissue, or the veins. But Gmelin found that two drachms produced no other effect but vomiting in dogs, that forty grains had no effect whatever on rabbits, and that twenty grains might be injected into the veins of the dog, without causing any symptom, except making it perform the act of swallowing,—a symptom, he ought to have added, which is caused by almost every sort of injection into veins.

18.—The relations of ***Manganese*** to the animal system are very singular. The sulphate is not an energetic poison when introduced into the stomach; thirty grains had no effect on the rabbit. A drachm, however, killed a rabbit in an hour, causing weakness of the heart's action, palsy of all the legs and deep respiration. It is still less energetic when applied to a wound. Two drachms applied in this way had not any effect on a dog. But it is poisonous when injected in moderate doses into the veins. Five grains caused slight vomiting. Twelve grains in one experiment caused immediate death, by destroying the irritability of the heart. But in another, the dog recovered from its depressing influence on the heart, and was then for some time affected as if with drunkenness. From this state, too, it gradually recovered; but it became exceedingly feeble, refused food, and died in five days. The cause of death appeared on dissection to have been a general inflammation of the stomach, small intestines, spleen, and liver. The last organ in particular was mottled with inflamed streaks that penetrated deep into its substance. The parts around the inflamed spot, as well as all the other organs of the belly, and likewise the great vessels, were tinged of a vivid yellow colour. It is difficult to pronounce from these experiments what is the mode of action of the salts of manganese, but they appear to differ from every other metallic poison.

The author closes the work with some general remarks, intended to point out what relations subsist between the poisonous effects of the metals and their chemical and physical properties. He shows that their poisonous properties bear no ratio to their electro-chemical relations. Thus among the electro-negative metals, or those which form acids with oxigen, we have arsenic, chrome, molybdenum, tungstene, and titanium; the two first of which are deadly poisons, the third, a poison of less activity, and the two last nearly innocuous. Among the electro-positive metals, or those which form *only* oxides with oxigen, we have rhodium, which is very feebly poisonous, intermediate between platinum and palladium, both of them very active poisons.

There is some relation between their activity as poisons, and their affinity for oxigen; those which have a strong affinity for oxigen being generally less energetic than those whose affinity is weaker. Thus the salts of the protoxide of iron, manganese, and chrome, and of the tungstic acid, are much less active than the salts of platinum, gold, silver, and quicksilver. This relation, however, is not universal; thus the salts of baryta, and arsenic are the most poisonous of all the metals, yet their oxigen is retained by a powerful affinity.

No relation whatever subsists between their action on the economy, and their physical and commoner chemical properties. No two genera can be more similar in the latter respect than the salts of baryta and strontia, yet the salts of baryta are deadly poisons, while those of strontia are almost harmless.

Most of the salts of the noble metals, gold, silver, platinum, palladium, have a double action; they are *corrosives*, owing to the power they possess of decomposing animal matter, and at the same time they have their *peculiar* action like the other metals, when they enter the blood.

Our author has arrived at very unexpected results, with regard to their relative effects, when introduced into the body by different organs and tissues. It is impossible to generalize them, and equally impossible to account for some of them. For example, the muriate of platinum evidently acts on the general system, besides causing great irritation of the elementary canal, yet when applied to the cellular tissue, it neither caused much irritation, nor excited any disorder of the general system.

ART. IV.—1. *Nouveau Traité de la Rage, observations Cliniques, Recherches d'Anatomie, Pathologiques, et Doctrine de cette Maladie.* Par L. F. Trolliet, Professeur de Medecine Clinique à l'Hotel-Dieu de Lyon, Professeur d'Anatomie à l'Ecole des Beaux-arts, Membre de plusieurs sociétés savantes. A Lyon, chez les principaux libraires. A Paris, chez Mequignon-Marvis, Libraire, Rue de l'Ecole de Medecine, No. 3, Pres celle de la Harpe. 1820.

2. *Monographie sur la Rage, ouvrage couronné par le Cercle Medical de Paris.* Par A. F. C. de Saint Martin, Docteur en Medecine de la Faculte de Paris, Membre du Cercle Medical. Paris, J. B. Bailliere, Libraire, Rue de l'Ecole de Medecine, No. 14, 1826.

AT the present time, when public attention is drawn to the subject of canine madness, by the singular assertions of an author, of whose book we may afterwards take occasion to speak, it may be not without interest to introduce to the attention of our readers two treatises which have appeared, the one a few years, the other only a few months ago, from the French press.

The treatise of M. Trolliet, which is the first in our list, was occasioned chiefly by the following occurrence. On the morning of the 22d of May 1817, an infuriated she-wolf broke from her haunts in the woods, scoured fifteen villages of the districts of Moretel and Cremieux, in the department of the Isere, in the Lyonnois, bit a great number of persons, of cattle, and of dogs, and spread consternation and alarm wherever she appeared among the inhabitants. The ravages of this furious animal among the human species of the neighbourhood, which were sufficiently extensive and very dreadful in their effects, came to be very soon known both in the country and in the city of Lyons. Her first appearance seems to have taken place at the village of St Victor, where she seized one man by the throat and tore his neck, bit and mangled the countenance of another most cruelly, and peeled off a large flap of the scalp from the one temple to the other, in a third. Shortly after she bit severely in the face a man watching horses in the neighbourhood of Gouvoux, and about day-break inflicted severe wounds on the head, thigh, and both arms of another *(Matthew Previeux)* who had attempted to seize and destroy her. In the village of Malleville, she bit several cows, and slightly wounded a young man in the arm. In the fields of Mepian of three persons who were bitten, the head of one (*Francis Sambet*) was lacerated, and two were torn in the face, (*Pechet* and *Rigaud.*) A little before sunrise, in the hamlet of Lonne, in the forest of Arandon, she bit *Claude Mayen* in the face; and, as he seized her jaw to make her quit her hold, his right hand was bitten in several parts. He was at length rescued by a dog, which the wolf pursued into the forest. She next fell upon two children of Marlieu, who, however, most courageously beat her off without receiving any wound; when she was put to flight by the threatening opposition of a dog, a bull, and some cows. In the village of Bouvesse *Constant Legre* was bitten in the arm, through thick woollen clothing; but in la Craz, in the commune of Charête, *Marie Deschamps*, a girl of nine years, whom she attacked, was immediately rescued by the cows she was herding.

About six in the morning as *J. H. Guyot* of la Balme was driving a waggon, near the castle of Amblérieux, he saw the animal rushing from a thicket across a meadow directly towards him; and though he hastened to escape by mounting his vehicle, the she-wolf clutched him, threw him on the ground, and inflicted several deep wounds on his lips and nose. In the territory of Cachernuit, near Hyeres, she mangled the face of an old shepherd as he was attempting to escape into a house, the door of which was precipitately shut; and inflicted a deep bite on the arm of a man who threw a stone at her. Between Hyeres and Torjonas, she attacked a girl *(Louise Vacher)* driving a calf, inflicted two wounds on the lower lip, at which the girl plunged into a stream that was near, while the wolf fell on the calf, killed it, and fled.

In the commune of St Baudille, a youth and a girl were bitten on the head; at Parmilleux the father of a family was bitten in the leg; and a fourth person received wounds on the back, which, however, might have been inflicted either by the teeth or the claws of the animal. At Chatelant a man was severely wounded in the right arm; and a shepherd boy, in attempting to rescue one of his lambs, was torn in the face.

By this time twenty-three persons had been bitten, torn, and otherwise mangled, chiefly about the head and face; and returning to their respective villages, with their faces shockingly mutilated and streaming with blood, the sight of these unfortunate sufferers excited universal alarm. This, however, soon subsided upon learning that the mad animal had been put to death by a young man named David, who, thrusting his right arm into the she-wolf's throat, overpowered her, threw her down, and held her until she received her death-blow from the hands of his father. Before this was effected, however, the young man had received a sufficient number of wounds to communicate the disease.

After the first panic had been converted into alarm for the ultimate fate of the sufferers, the fears natural in such a calamitous occurrence suggested the usual means of precaution; and all the expedients, which custom has sanctioned, or which ingenuity could suggest, for preventing the appearance of canine madness among so many persons, were put in vigorous use. It was unfortunate, however, that the sufferers were living in the country, scattered at distances so great from the residence of medical and surgical attendants, that, in general, the earliest measures that could be adopted were too late. Those who were least injured applied to the practitioners of the country; those more seriously wounded were conveyed to the Hotel-Dieu of Lyons. All the precautionary means attempted were, as usual, unavailing. Two weeks had scarcely elapsed when the characteristic symptoms of canine madness began to appear in some of the cattle as well as the persons who had been bitten. Two cows in the country refused food and drink, and speedily died of hydrophobia; and Mayen, who had been so severely mutilated on the face and right hand at the hamlet of Lonne, died in the Hotel-Dieu of Lyons of this shocking distemper. Eventually, not fewer than thirteen of the twenty-three persons who had been bitten fell victims to canine madness; and a fourteenth, on whom the scalp had been torn off, died from inflammation of the brain proceeding to suppuration.

M. Trolliet is professor of clinical medicine at the Hotel-Dieu of Lyons; and as six of the thirteen cases of fatal hydrophobia took place within the walls of this hospital, his professional cares were necessarily directed to the alleviation of their sufferings, while his attention was particularly called to the intimate observation of the malady under which they were labouring. He first gives a minute and circumstantial history of the sufferings of the six fatal hydrophobic cases which were treated at the hospital, with an account of the appearances found on examination after death, and occasional remarks and inferences; he then details more briefly the principal circumstances of the seven fatal cases which took place in the country, according to information communicated by their friends; and, thirdly, he mentions shortly the cases of nine persons who were bitten, but who never betrayed any symptom of canine madness. Two cases, given to show the effect of bleeding to *deliquium animi*, and of the exhibition of water plantain over hydrophobia, with a few inferences, conclude the first part of the work of M. Trolliet.

The other five parts, of which it consists, may be regarded as suggested by the facts narrated in the first. They embrace the discussion of the following subjects,—the pathological anatomy of canine madness; the general description and distinctive characters of the disease; symptomatic hydrophobia and diagnosis; the *virus*, or poisonous matter which is believed to communicate the disease; and, lastly, the treatment. The subjects are investigated with considerable research and judgment; and the author shows, that he has not only observed the phenomena of the disease accurately, but that he has compared the observations of others with his own with a considerable share of philosophical precision and acuteness.

The work of M. de Saint Martin is more recent, more elaborate, and perhaps a little more learned, but we doubt whether it is entitled to the same praise, or will, really and truly, excite so much interest as that of M. Trolliet. Though not deficient, either in facts or in dissections, it wants the essential recommendation of cases seen by the author. It undoubtedly exhibits a very full and perfect examination of the subject; and in nine chapters, each consisting of sundry sections, M. de Saint Martin has investigated, with much attention, almost every question and every opinion relating to the formation of this disorder among the canine species; its propagation among animals and the human race; its pathology; diagnostic characters, and treatment. He is perhaps too credulous a little, and in the collection of cases has admitted more than one to which a strict judge might urge reasonable objections. In some instances, he is tedious in his reflections and inquiries, and does not manifest that philosophical brevity and precision which tends so powerfully to illustrate an obscure and difficult subject. Upon one or two occasions, we found him wandering from the train of inquiry, and introducing matter, if not irrelevant, at least not pertinent to the subject. But with these few exceptions the monography on the "Rage" contains much good information, some things not exactly antiquated, and is rather a good book.

As both works are entitled, on the score of their intrinsic merits, to some attention, we shall attempt to convey to the reader a short sketch of their principal matter and most important contents. We need not follow our authors in their learned inquiries into the antiquity of canine madness; nor shall we lay much stress on the passages of Homer, Hippocrates, Aristotle, and other ancient authors, to which M. de Saint Martin has referred, as containing evidence of the knowledge or ignorance of the ancients regarding this malady. The question was investigated long ago, with sufficient learning and much judgment, by Dr John Hunter, who came to the conclusion that it did not exist in Greece till a short time before the days of Aristotle.* In his pages, therefore, the particulars of this inquiry may be found.

Nor do we regard it as important to trace the history of this disease from the days of Galen down to those of Astruc, Dessault, and the acute Sauvages, or more recently to the time of Andry and Portal. Previous to the middle of the last century, observation was either too inaccurate or too imperfect, prejudice was too violent, and credulity was too great and too general, to study with cool deliberation the phenomena and pathology of a disease, which, though sufficiently dreadful in itself, was rendered infinitely more so by the imaginary horrors with which the credulous fears of mankind had invested it. Perhaps the first distinct cases,—the first, that is, to which a scrupulous mind could not reasonably object, were those communicated by Dr Dickson in the third volume of the Medical Observations and Inquiries in 1767; and the next was a case communicated by Dr Munckley, the following year, 1768, to the Royal College of Physicians. (Vol. ii. p. 46.) The case by Mr Wrightson, in the same volume, is somewhat doubtful; and the history of the unfortunate Mr Bellamy, as given by Dr Fothergill, is by no means free from objection. To pass over various intermediate documents to which we may afterwards refer, the second part of the Memoirs of the Royal Society of Medicine of Paris for 1783 contains many interesting examples of the disease being communicated by dogs and wolves, as it often is in France, and several essays, in which a more discerning spirit begins to appear than had prevailed in the writings of several of the foreign physicians. With every wish, however, to be impartial, we cannot help thinking that the most distinct and satisfactory accounts of the disease first appeared in our own country. One of these, a short but luminous general description of its phenomena and effects, is that which Dr John Hunter compiled in 1790-93, from cases and materials collected by the Society for the Improvement of Medical and Surgical Knowledge; † and the fullest, most elaborate, and most judicious treatise on the subject is that by Dr Hamilton of Lynn Regis, published first in 1788, and afterwards in 1798. The essay of Dr Mease of Philadelphia, first published in that city in 1792, and afterwards reprinted in London, with a preface by Lettsom, in

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* Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, vol. i. p. 526.

† Transactions of a Society, &c. vol. i. p. 294.

1793, deserves also to be commemorated for the judicious and philosophical manner in which the author has investigated his subject. The discernment and judgment also of Dr Ferriar appear in two essays on this subject in his Medical Histories and Reflections. We mention these works particularly, because we are satisfied, from various circumstances, that they are forgotten by the great body of the profession in this country, and are either unknown, or not sufficiently appreciated among our continental brethren. To neither M. Trolliet nor M. de Saint Martin do the researches of these authors appear to be known; and, indeed, the most recent English writers with whom they appear to be acquainted, are Nugent, who wrote in 1750, and Vaughan, who published an Essay containing two cases from the bite of a dog, and one from that of a cat, in 1778. How much advantage might have resulted from the previous careful study of the authors above mentioned, can be distinctly understood only by those who compare their writings with those of the present day.

After these preliminary observations, our readers will not be surprised when we say, that we agree not with M. Trolliet that the description of the characters of hydrophobia is one of the most imperfect parts of its history. The assertion is readily contradicted by referring to the authors above mentioned, who have sketched with accuracy and fidelity the general outlines and characteristic features of the disease, from the collection of numerous, well-authenticated, and unequivocal cases. There is not the slightest doubt, that, whether the disease be communicated by the dog, as it almost invariably is in this country, or by the wolf, as it often is in France and Italy; the kind, assemblage, and progress of symptoms is the same; their termination and effects are invariable; and, in short, the disease is identical throughout. It is, therefore, unnecessary to dwell on the description of canine madness, as it takes place in the dog, wolf, or fox, or appears when communicated to the human subject. In both the authors now before us, it is distinctly and accurately enough drawn. That by M. Trolliet is manifestly the better of the two, if difference there be; and this admission is certainly made by M. de Saint Martin, who has both abridged and quoted from the delineation given by the former.

The true and correct history of the disease, however, involves certain points, of which it is of the utmost importance to obtain clear and definite notions; and one of these is the practicability of knowing the disease by characters so distinct and peculiar, as to prevent the chance of its being confounded with others which it may happen to resemble. The facility of mistaking tetanus for hydrophobia was remarked by Mease, (p. 7.) * by Hunter, (303, 305,) by Hamilton, (89, 108, 111,) by Ferriar, (vol. i. p. 253,) and many other authors. Dr Hamilton, in his chapter on spontaneous hydrophobia, further shows, that several cases which were attended with hydrophobic symptoms, and were therefore reported as examples of canine madness, were nothing but instances of mania or phrenzy, excited by fear, and the mental agitation arising from the idea of having been bitten (p. 250;) and Ferriar expressed a similar opinion on the same subject. † M. Trolliet, in like manner, contends, that the symptoms attributed to canine madness are only a confused group, which belong equally and indifferently to phrenzy, encephalitis, tetanus, hysteria, when they are attended, as they not unfrequently may be, with a symptomatic hydrophobia. The question, therefore, which immediately suggests itself for determination, is, whether the symptoms furnish any circumstance or circumstances competent to enable the observer to distinguish the disease?

There is little doubt, that an impartial survey of the best authenticated and most distinct cases, and perusal of the most faithful general descriptions given by authors, will lead to the conclusion, that, of all the symptoms which attend this disease, none is entitled to the character of pathognomonic. Even the dread of water, as it has been improperly named, or rather the pain and difficulty resulting from the attempt to swallow fluids, has been admitted, by every good authority, to be utterly insufficient for this purpose. Cases of canine madness have been observed both in the dog and in the human subject, in which it is not very urgent, and certainly by no means proportional to the severity of the other symptoms; and it is agreed by all, that it occurs not unfrequently to a great extent in several other diseases.‡ We are indebted to M. Trolliet for attempting a more

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* "In other cases also," says Dr Mease, "where the disease was said to have appeared without a bite, I am convinced that they were no more than cases of tetanus, both from the causes that induced them, and from the known circumstance of an aversion from fluids taking place in that disease."—Mease, p. 7.

† "Several cases," says Dr Ferriar, "have been described, of late years, under the title of *spontaneous hydrophobia*. I think it very evident, from the view I have exhibited, that no such disease exists. If those cases be analyzed, they will be found to belong to the class of hysterical, febrile, mental, or spasmodic disorders, and, by ranking them under their proper titles, we shall at once clear this subject from a great and accumulating mass of error." Medical Histories and Reflections, vol. iii. p. 48.

‡ "But the general disorder," says Dr Ferriar, "has been known to exist without this remarkable symptom. The dread of water, therefore, which has been always considered as constituting the diagnosis, is, in reality, only the symptom of a symptom." p. 252.—"But the aversion to water has not been found a constant symptom of rabies, and it has frequently appeared as a symptom of other disorders. Hence have arisen the great confusion and obscurity of observations, which seem to increase in proportion as observers have multiplied." Vol. iii. p. 33.

precise view of this pathognomonic symptom than is found in the writings of any previous author. According to his personal observation, it takes place in the form of a fit of convulsive shivering, preceded by certain symptoms, continuing a certain time, and terminating in a determinate manner. After feeling heaviness, weight, and pain of the head, and general weakness, for a night, a morning, or a few hours, the person or persons are thrown, at the sight of fluids, into a state of agitation, similar to that which occurs to one who actually dreads cold water, and is forcibly and reluctantly plunged into it. The chest is thrown into convulsive motions, during which short panting inspirations are succeeded by rapid expirations; the arms are convulsively shaken; the head elevated; the person and limbs become rigid; and the patient complains of a suffocating tightness referred to the neck and chest, and inability to swallow. M. Trolliet, however, admits, that it is not only the sight of a fluid, which may induce the first *hydrophobic shivering*, (le frisson hydrophobique,) as he names it. In two of his patients, the existence of this first symptom was betrayed by the agitation of the air, and it was readily repeated by the sight of a mirror, a transparent glass, or a brilliant piece of metal. (192, 193.)

It appears that this hydrophobic shivering abated or ceased entirely in the course of the disease; and that it was only during its continuance that the inability of swallowing fluids was observed; for after its cessation, he remarks, his patients quenched their thirst sometimes as in the state of health, so as to make him either doubt that the disease was canine madness, or to believe in the efficacy of his remedies. Of this, however, he was soon destined to be undeceived. The hydrophobic shivering returned in a few hours with all its accompaniments, and terminated in the usual mode; and M. Trolliet comes to the decision, that it is impossible to admit the existence of canine madness without the *hydrophobic shivering*. (195.)

This was further accompanied, in the cases observed by our author, by a symptom presented by no other disease. This was a sense of unusual heat referred to the chest, preceded and accompanied by the sensation of a suffocating vapour, sometimes confined to the neck and chest, sometimes spreading to the belly, in some instances traversing the whole person from head to foot, and causing a convulsive shivering. This internal burning, to which M. Trolliet applies the distinctive epithet of *hydrophobic vapour*, and which he regards as the *incendium nervorum* of Democritus, is described as a painful heat extending from the neck to the epigastrium, accompanied with the keenest and most insufferable anguish, and is represented as the invariable accompaniment of the hydrophobic shivering, increasing, diminishing, and returning, as it increases, abates, or returns.

The saliva and froth at the mouth of hydrophobic patients have been the subject of much imagination, and not a little error. M. Trolliet states, that, on the first day of the disease, he never perceived this frothy slaver; and it was only while the chest was inflamed by the burning pain of which it was the seat, that the convulsive breathing expelled a mucous fluid, which was beaten into foam by admixture with the air. On the second day, the patients began to spit; as the secretion increased, the excreated matter became more frequent; its viscidity made it adhere to the throat; and it was expelled in the violent efforts of the patient by rapid and forcible expirations. Towards the close of the disease, when this spitting was incessant, and the great weakness of the muscles rendered its expulsion impossible, the frothy slaver was discharged from the windpipe by a stertorous breathing, filling the mouth, and spreading on the lips of the patient.

We have thus brought before the eyes of our readers the three symptoms of the hydrophobic rigor or shivering, the hydrophobic vapour, and the hydrophobic slaver, because they are not only intimately connected with the pathological views which M. Trolliet has given of the disease, but because, according to the result of his experience, they are essential and pathognomonic. He considers them as so specific and characteristic of the distemper, that he would doubt its existence where they were wanting.

It is, however, by no means a matter of indifference to trace accurately the order in which the different symptoms and phenomena of the disease proceed. M. Trolliet has, in the fifth article of his third part, drawn a very accurate and faithful sketch of this succession, which may be particularly recommended to the perusal of the student. One of the most important points noticed by the learned author is, that in general at the close of the first day of declared *rabies*, or in the course of the second, the hydrophobia diminishes or entirely disappears; the pains abate; the patient can drink, quench his thirst, and eats with facility; and may even be led to entertain hopes of recovery. In a few hours, however, he is fatally undeceived. The hydrophobic accessions return, become more frequent, and almost incessant; and death may take place in the usual way, sometimes on the second day, ordinarily the third, rarely on the commencement of the fourth.*

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* "The duration of life, from the appearance of the hydrophobia till death, varies from thirty-six hours to four or five days; the most common period is from two to three days."—Hunter, Transactions of a Society, &c. vol. i. p. 308.

The great and impenetrable mystery, however, relating to this disease, is to explain its nature, as a morbid process, and to discover what is the cause of the symptoms, and trace by examination of the organs after death, wherein and to what extent their functions have been deranged during life. A considerable number of hydrophobic subjects have been dissected with some attention since the time of Hoffmann, Van Swieten, Sauvages, Morgagni, and Lieutaud, down to the present day; yet it cannot be said that much progress has been made in illustrating the pathology of canine madness. Dr John Hunter has given very shortly the result of what was known in his day (1790,) derived, we are informed, from a considerable number of dissections communicated to the Society; and in the pages of Dr Robert Hamilton will be found a tolerably extensive and correct critical view of all the evidence which could be obtained from sources both domestic and foreign. The only general conclusion which it is possible to derive from all the observations recorded, is that of an appearance similar to inflammation, viz. a great number of red vessels, with small streaks of red blood on the inner coats of the stomach near the cardia, and, occasionally, a blush of redness spreading into the œsophagus. The correctness of these statements is supported by the authority of Dr Baillie and others, who have since published dissections of rabid persons. The conclusion which naturally flows from facts of this description is, that canine madness in the human subject consists in a spreading inflammation of the mucous membrane of the gullet and stomach. Yet no conclusion can be less consistent with the phenomena of the disease, or is capable of throwing less light on it than this. For, in the first place, it is certain, that neither gastritis, nor inflammation of the œsophagus, ever gave rise, with one or two trifling exceptions to be afterwards noticed, to the true hydrophobic symptoms; and, in the second place, it is equally certain, that blood-letting, and the most prompt and judicious use of the antiphlogistic regimen, are utterly unavailing, and exercise no control whatever over the genuine canine madness. This idea, therefore, of the disease consisting in gastric inflammation, cannot be maintained, and must be abandoned, until it is substantiated by additional facts, and modified by more improved views.

Not much less objectionable was the opinion given by Ferriar, who, from two cases published in his Medical Histories and Reflections, modified and extended the doctrine of inflammation of the œsophagus and stomach. "It appears from these facts," says this ingenious observer, "that the dread of water and of cold air, in cases of rabies, depends on inflammation and spasmodic affections of the œsophagus and stomach, which sometimes extend to the liver, the pericardium, or the heart itself. It also appears that the lungs are sometimes affected in a manner hitherto neglected by writers on this complaint; that an effusion of blood into their substance takes place, similar to that which proves mortal in certain states of peripneumony. When this occurs to the dissector, it is unnecessary to look for any other cause of death." Now, while we allow Dr Ferriar full merit for remarking the morbid state of the lungs, in which we shall find he has anticipated M. Trolliet, we cannot refrain from expressing our surprise, that a physician of such accurate powers of reasoning did not perceive, that a vital organ might be sufficiently deranged in structure to be a cause of death, and, nevertheless, not be the pathological cause of the proper morbid phenomena during life. It might, with equal probability, have been their effect; but, unless it could be proved to be an invariable and constant result, that the lungs were hepatized in rabid persons, and also that this hepatization would account for all the phenomena of the disease, it is manifestly inconsistent with sound reasoning to convert it at once into the essential and pathological state of the disorder. The symptoms of canine madness, it may be said, are very different, indeed, from those of peripneumony, nor are they controlled or removed by the well-known means of removing acute inflammation of the lungs. But we shall presently have occasion to speak of this doctrine, as proposed by another author.

M. Trolliet has been led, by the number and accuracy of his anatomical researches, to give a different, and, so far as we are enabled to judge, a more correct notion of its pathological nature. M. Trolliet was first led to inquire into the seat, and trace the formation of the rabid slaver; and as he had adopted the ordinary opinion of its being a morbid form of the saliva, he examined successively the mouth, pharynx, and salivary glands, the ordinary seat of the secretion, without being able to satisfy his doubts, or gratify his curiosity. From the mouth and throat, M. Trolliet directed his attention to the windpipe and breath-passages; and as he found in three cases a frothy mucous fluid tinged with blood in the trachea and bronchial tubes, he inferred that this could not be connected with the salivary secretion, and was rather to be regarded as bronchial mucus, mixed by agitation with the air. Connecting with this idea the fact established by observation, that the painful anguish, the burning heat, the choking, and all the important phenomena of the disease are referred to the air-passages, he adopted the notion that it was elaborated by secretion in the tracheal and bronchial mucous membrane. This conclusion he has further attempted to corroborate, by referring to dissections made by many other authors, who also found this frothy mucus in the windpipe and bronchial tube. Upon the whole, therefore, he infers, that every thing proves that the saliva does not form the frothy slaver which is thrown out on the lips, and is not the vehicle of the rabid *virus;* and that pathological anatomy, observation, and analogy, concur in showing that this slaver, which conveys the principle of *rabies*, is formed in the air-passages, in the larynx, windpipe, bronchial tubes, and their divisions.

The merit of the originality of this idea of the hydrophobic slaver being derived from the tracheal and bronchial mucous membrane, has been claimed by M. de Saint Martin, who asserts that he first announced it in his Inaugural Dissertation in 1816. Though he allows M. Trolliet the merit of adopting this opinion, collecting proofs in its favour, and rendering it greatly more probable, yet he takes care to apprise us, that he was not the first who formed this idea. We need not say, that we have not the means of discovering on whose side of the question the merit lies in this instance, or whether M. Trolliet had an opportunity of perusing the dissertation of M. de Saint Martin, between 1817, when the accident happened which gave rise to his inquiries, or in 1820, when he published them; but when we find it mixed up, as it is, in the monography of M. de Saint Martin, with various notions about secretion of the windpipe, excited sympathetically by the state of the brain, it will not be very difficult to see that the ideas of the latter author are, if original, neither very intelligible nor very useful in practice.

These results, however, would not have been so satisfactory without attentive examination of the lungs; and though these organs have either been neglected in common with others, or imperfectly examined by former authors, M. Trolliet has succeeded in establishing very uniformly a decidedly unsound state in the bodies of those who have died of the canine disease. His attention has been especially fixed on two phenomena, emphysema of the lung and neighbouring cellular tissue, and a deep red colour of the organ, denoting considerable change in the capillary circulation. The first of these phenomena, which he recognised with facility in four cases, he ascribes to rupture of some of the pulmonic vesicles, during the convulsive and violent action of the muscles of the chest. It is not improbable that the presence of air in the blood found in the heart and large vessels of several of the cases is to be regarded as a part of the same morbid change. The second, of which in his anxiety to obtain authorities he might have found a good confirmation, as we have already seen, in Ferriar, is distinguished by certain characters more or less definite. It is in the first place specific in its nature, being the result of the operation of a peculiar *virus* or poisonous matter. Secondly, it is confined to the mucous membrane, over which it spreads continuously, without extending either to the submucous cellular tissue, or to the serous envelope of the lungs. Thirdly, this inflammation, which is also accompanied with cerebral inflammation, and other organic and functional derangements, afterwards to be noticed, is invariably rapid in progress and fatal in termination.

Without following our author through all the changes which he traces in the circulating fluid, we notice briefly his remarks on the state of the brain and nervous system. The derangement in the functions of sensation and thought have been observed by most authors, and in almost all cases of canine madness; and in such examples as have fallen under the inspection of competent anatomists, various changes have been found in the brain, its membranes and blood-vessels. These changes are considered by M. Trolliet as inflammation, or indicative of that process, and are either found in the membranes and their appendages, or in the cerebral substance. Among the former are enumerated injection of the vessels of the *pia mater*, brown colour or vascularity of the choroid plexus, distension of the sinuses with blood, and perhaps the jelly-like aspect extended over a part of the surface of the brain. Among the latter are to be reckoned inflammatory spots and ecchymoses on the surface of the brain; numerous blood-drops escaping from its substance when divided by the knife, and bloody and watery serosity in the ventricles. But though he regards all these changes as traces of cerebral inflammation, he considers it as of a peculiar and specific nature, utterly distinct from ordinary inflammation of the brain, and resulting, as that of the organs of respiration, from the operation of a morbid poison.

Lastly, he shows from various cases, both observed by himself and recorded by others, that the red and inflamed appearance of the gullet and stomach, so much and so often remarked in fatal cases in this country, is neither invariable in its presence, nor sufficient to explain the disturbance of respiration, nor the disorder of the functions of the brain, nor the occurrence of the fatal event so early as the third or fourth day.

These observations, which demonstrate the simultaneous affection of so many organs, tend perhaps rather to perplex than elucidate the subject; and it is extremely difficult, according to the usual mode of reasoning on diseases, to form a very distinct idea of a distemper, in which not one but several organs present marks of inflammation; in which inflammation is not the sole morbid process; and in which it is impossible to distinguish the primary from the secondary effects; the diseased actions which take place first and produce the others, from these which are subsequent and produced.

We do not perceive that M. Trolliet has solved this difficulty, or by any means penetrated the mystery of the disease. He has, in his chapter on classification, indeed, shown that every previous author had taken too narrow a view of the subject; but it is manifest that his is too wide, or rather too vague; and any ordinary intellect must be quite bewildered in the maze of symptoms which he has attempted in this place to appropriate to canine madness. Thus he agrees with Desault and Brogiani in admitting it to be a contagious distemper. With Pouteau and Leroux he gives it symptoms of nervous excitement. He joins with Cullen in thinking them spasmodic, and with Tourtelle in giving them the general character of being painful. He cannot refuse to Boerhaave that it presents inflammatory symptoms, which, with Morgagni, he places in the brain, and with Fothergill and Ferriar in the organs of respiration. With Sagar he admits that the disease is attended with melancholy and fear: and with Linnæus that it is attended with disturbance of the functions of thought and intellect; and he concludes with Rush that it presents the rapid progress and fatal termination of malignant fevers. In this long and confused assemblage it is impossible to recognise any individual characters to mark a peculiar nature in the disease, and after perusing it, we are as far at sea as ever. One or two remarks, which we shall submit, may not exactly clear away the difficulty, but may tend to reduce the question within narrower limits.

First, It is certainly not necessary to suppose, that the affection of the brain and of the organs of respiration are simultaneous, and resulting from the operation of the morbid poison on both. It may be that the affection of the organs of respiration is the result of previous disorder of the brain; or that the disorder of the cerebral circulation is the consequence of previous affection of the lungs and bronchial membrane. This question is attended with two difficulties, to the resolution of which the most cautious and deliberate inquiry are requisite. It is certain that obstruction to the pulmonary circulation, so considerable as that observed in the lungs of morbid subjects, might readily cause all the appearances remarked in the brain, its membranes and blood-vessels; and it is not less certain, from the experiments chiefly of Le Gallois and Nysten, that an affection of the brain and its blood-vessels, such as that indicated by the observations in the work before us, is fully adequate to cause the impeded, panting, and inefficient respiration during life, and the same appearances nearly remarked in the lungs after death. In several of the experiments practised by these physiologists on dogs, rabbits, &c. division of the pneumogastric nerve, and similar injuries of the brain, were followed by the same disordered respiration, resembling bastard peripneumony, and by the same state of the lungs after death. The question, therefore, to which we are brought, is to determine which of the two sets of organs, the nervous or the respiratory, are most uniformly and invariably affected;—for if it could be shown that the affection of one is more uniform than that of the other, then it would be reasonable to infer that this organ, or set of organs, was also the first affected.

Looking only to the dissections of modern days, which may be supposed to be more correctly performed than those by which they were preceded, we find almost no assistance; for the weight of evidence on either side is in general, from various causes, very evenly balanced. Thus in Dr Ferriar's second case, already noticed, and in Dr Willan's case given in his Reports, the lungs are stated to be solidified as in inflammation. In Dr Beddoes's first case, (Medical and Physical Journal, vol. xx.) the mucous membrane of the larynx and trachea appeared considerably inflamed, and covered with a frothy mucus, tinged with blood, from the glottis to the bronchi. The high colour of the under surface of the lungs must have been the effect of position. In Mr Smith's case, the pharynx and trachea exhibited no preternatural appearance except an unusual quantity of mucus.

In M. Gorcy's case, in the third volume of this Journal, the violet appearance of the posterior two-thirds of the lungs is evidently the effect of the blood gravitating after death; the internal surface of the larynx was healthy, that of the bronchial tubes not examined. In Mr Oldknow's excellent case, in our fifth volume, the appearances are more marked. The mucous membrane of the windpipe was inflamed from the glottis to the subdivisions of the bronchia, and contained considerable mucous secretion similar to that spit up during life. In another case in our thirteenth volume, inflammation of the mucous membrane of the pharynx, spreading down the larynx and trachea to its bifurcation, is mentioned as the only appearance discovered by dissection; while nothing morbid was seen either in the brain or in the other organs.

In Dr Satterley's case, in the fourth volume of the Medical Transactions, the windpipe was nearly filled with a thick and glutinous mucus, which was continued into the minute bronchial tubes, where, however, it was thinner. In a case given by Dr Rush the windpipe also contained this sort of mucus. In Dr Rutherford's case, on the contrary, and in Dr Marcet's, the lungs are described as healthy. In Dr Brandreth's first case, the lungs are said to be healthy. In the second the larynx and windpipe, especially behind, were much inflamed, and the lungs were in an extraordinary state of congestion.*

In Dr Ferriar's case, again, the pia mater and ventricles contained limpid fluid. In Dr Willan's, Dr Rush's, Dr Rutherford's, and Dr Beddoes's, the brain was not examined. In M. Gorcy's it presented no particular lesion, except a small quantity of serous fluid in the ventricles. In Mr Smith's case, the appearances remarked are of no moment. In Mr Oldknow's case, unusual vascularity of the membranes, and six drachms of fluid in the ventricles, are ascribed to the effects of a fall received about a year before the fatal event. In Dr Marcet's case, the vessels on the surface were turgid with blood; fluid was effused between the *pia mater* and arachnoid; and serum, but not more than the usual quantity, it is said, was contained in the ventricles. In Dr Satterley's, the brain was sound, *except a turgescency of the vessels of the pia mater.* In Dr Brandreth's first case, the appearances of cerebral affection were equivocal; but, in the second, they were very distinct, both in the brain and its membranes. A case given by Dr O'Donnel furnishes equivocal characters both in the larynx and brain; but the dissection does not appear to have been accurately performed.

Thus, in two of twelve cases, carefully examined, the lungs were found hardened or hepatized; in six of twelve cases, the mucous membrane of the windpipe is said to have presented marks of inflammation, and to have been filled with viscid frothy mucus. In four of twelve cases, the brain or its membranes presented effused fluid, but was otherwise healthy; in one, marks of cerebral congestion; in one, nothing of consequence; in one, appearances ascribed to injury of the head; in two, doubtful appearances; and, in four, the head was not examined.

Secondly, it must not be forgotten that the viscid mucus, which is secreted by the tracheo-bronchial membrane, cannot be justly said to be the result of ordinary inflammation. The phenomena of catarrh, of croup, of bronchitis, and other diseases, in which the pulmonary membrane is inflamed, show, that if it were ordinary inflammation it would be thick, opaque, and puriform, or even purulent, a state which has never been found in rabid persons. One of two conclusions, therefore, regarding the nature of this affection must be formed,—either that the inflammatory state of the tracheo-bronchial membrane is a secondary effect of some other primary morbid action, or that it is quite unlike any other inflammation, and entirely *sui generis.* Upon the whole, therefore, though there is undoubtedly a want of positive evidence, we cannot look either to the brain, or to the organs of respiration, with a greater chance of discovering the nature of hydrophobia, than we did to the œsophageal and gastric mucous membrane.

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* Medical and Surgical Journal, vol. xxii. p. 79 and 236.

Amidst this difficulty of equally balanced evidence, it may become matter of inquiry in what circumstance or circumstances we are to place the individuality of the disease. As neither the symptoms nor the pathological changes seem to be singly or together adequate to furnish unequivocal marks, it is manifest that we must recur to the exciting cause, and those circumstances connected with its operation on the system, in order to give form and individuality to the disease.

All the best authorities, as Mease, Hamilton, Hunter and Ferriar, agree in exploding the idea of spontaneous hydrophobia, or hydrophobia originating without the bite of a diseased animal; and M. Trolliet has also, after much elaborate and ingenious inquiry, come to the same conclusion. There are, indeed, several diseases with more or less resemblance to hydrophobia, or with downright hydrophobic symptoms; but there is no authenticated instance of genuine canine madness taking place without a bite of an infected animal; and further, the instances, in which the disease is said to have originated from the bite of a cat or badger, &c. are to be viewed with great suspicion, for no proof is given that such cat or badger either was actually rabid, or died of the disorder. Hydrophobia, as a symptom, may occur, and has been known to occur in hysteria, in cerebral inflammation, and above all in tetanus; but attentive observation of the other symptoms, and the fact of no bite having preceded them, will be sufficient to prove that this is not the hydrophobia of canine madness. This point M. Trolliet has investigated, in a most elaborate and satisfactory manner, in his fourth part, treating of symptomatic hydrophobia. He shows, in the first article of this part, that it is quite possible to confound cerebral inflammation, epilepsy, a fever which he terms *cerebral hydrophobic*, ague with hydrophobic symptoms, and even symptoms similar to hydrophobia in persons who have been bitten, but who have recovered, with genuine canine madness. It is on the latter ground that he sets aside, not only the old case of Elizabeth Bryant given by Nugent, and the more recent case of Rossi cured by galvanism, but the better known cases of Shoolbred and Tymon cured by blood-letting, and which he shows, were more closely allied to phrenzy than to canine madness.

But another source of these mistaken views on the true and distinctive nature of this disease, is shown by our author to consist in the fact, that various diseases are liable to be complicated or combined with hydrophobic symptoms. A medical attendant, for example, or any other person, fancies he has been infected by a dog, or by a patient, evidently dying of hydrophobia. He is seized forthwith with the most frightful apprehension, which no effort can banish from his mind. He fancies himself to be already labouring under the operation of a poison for which he well knows there is no antidote, and believes himself the victim of a disease for which the resources of art possess no remedy. The mental agitation into which he is thrown by the unhappy idea, is sufficient to induce a train of complaints, in which the hydrophobic sensations perform a conspicuous part. The writings of physicians are full of such imaginary cases, from the age of Themison to that of John Hunter,[*] Dr Hamilton,[†] and Dr Ferriar;[‡] and M. Trolliet adduces, as examples of the effect of this nervous agitation, the case of himself, of his friend Nicot, of the brother of one of the sufferers in the affair of the she-wolf, and other instances recorded by authors.

Again, hydrophobic symptoms may occur in various forms of cerebral inflammation, as in a case given by Pouteau, more especially in fevers with such inflammation, as hysteria or epilepsy, or *melancholia*, and especially in tetanus; and M. Trolliet follows Hamilton,[§] in considering the cases of hydrophobic symptoms, after the bites or scratches of animals not rabid, as cats, badgers, cocks, &c. as referable to this head. In like manner, hydrophobic symptoms may appear in affections of the œsophagus, or inflammation of the stomach, as in the well-known cases of Innes in the Edinburgh Medical Essays; they may appear after certain acrid substances taken into the stomach, as the thorn-apple, beech-nuts, &c. and in other diseases, for the enumeration of which the work must be consulted.

From all these facts, M. Trolliet justly infers the necessity of the bite of a rabid animal preceding every case of genuine rabies, and that no case can exist without this previous mode of causing the disease. It then comes to be matter of inquiry, in what respect the infliction of the wound is necessary to the production of the disease, and how it operates; and the consideration of this question, which M. Trolliet discusses shortly and clearly, in the first article of the third part, and M. de Saint Martin at great length, in his chapter on the causes of rabies, furnishes a topic of nice and difficult inquiry. As the connection between the bite and the symptoms which follow cannot be made the object of sensible observation, various opinions have been offered to explain this connection, according as physicians have believed the symptoms to be peculiar or not. Thus, a few such as Bosquillon, who maintains that the disease is the result of imaginary fears, deny the possibility of its being communicated by a sickly animal to another in health. This idea was long ago refuted by Dessault, who remarked, that horses, mules, asses, and other animals, who cannot be supposed to be conscious of any effects, real or supposed, from the bite of a rabid animal, are, nevertheless, affected with the disease. It is further well known, that many persons who never heard that a dog, a wolf, or a fox, was capable of communicating such a disease, and even young children and infants in the cradle, have, nevertheless, shown the symptoms of genuine and fatal *rabies*. Thus, Dr Haighton's patient was five years old,[*] Dr Edward Johnstone's four,[†] and Mr Turner's only three.[‡]

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[*] See Account of his Life by Sir E. Home.

[†] Vol. ii. p. 241.

[‡] Vol. iii. p. 46.

[§] Remarks on Hydrophobia, or the disease produced by the bite of a mad dog, or other rabid animal. By Robert Hamilton, M. D. &c. In Two Volumes. London, 1798. 2d edit.

By others again, such as M. Girard, who regards the disease as a variety of *tetanus*, it is ascribed to the contused and lacerated character of the wound. This idea is doubtless plausible, insomuch as it is often difficult to distinguish tetanus from genuine *rabies*, and as tetanus may be accompanied with hydrophobic symptoms; but it is most satisfactorily refuted by the facts and arguments adduced by both our authors. M. Trolliet very properly appeals to the noted fact of many persons being smitten with the disease at once by the same animal. When a snappish cur, for example, inflicts a wound on a single individual, who afterwards dies of the usual symptoms of rabies, there may be reason to say, that these symptoms are those of traumatic tetanus merely. But when, as in the cases of Dr Dickson, three persons are bitten by the same mastiff, and all die with symptoms of the same disorder; when, as in the cases communicated by Dr Maclean and Mr Edwards to Dr Hamilton, six persons are bitten by the same mad dog, five of whom become rabid, and die with the usual symptoms; when, in short, as has happened repeatedly in France and Italy, a single wolf issues from the forest—ravages whole villages and districts, biting and rending wherever he appears, and from fifteen to twenty persons so bitten actually fall victims to the same disease, it is not in the nature of things to suppose that the whole of these persons have thus laboured under tetanus only. Tetanic symptoms may have prevailed more or less, and, perhaps, one or two of the cases might be of this description; but that all of them were so, it is utterly impossible either to believe or to demonstrate.

The shocking accident related in the beginning of this article, which is sufficient of itself to disprove all notions of this description, is by no means new or solitary. In the month of September 1772, two persons, and a great number of cows, and other cattle, were bitten by the same wolf; all of them died raging. (Baudot.) In June 1765, of five persons bitten by a raging wolf at Giri and St Bonneau, four died hydrophobic; and all the oxen, cows, and dogs bitten, shared the same fate. (Ibid.) In July 1781, three persons bitten by a rabid wolf near Autun died rabid, nothwithstanding the use of mercurial frictions. Not long after, of five persons bitten by a wolf near Vienne in Dauphiné, four died. Of ten persons bitten by a wolf near Nolay in Burgundy, nine died rabid. Of fifteen persons bitten by a wolf in the Maçonnais, eight perished of canine madness. Of twenty-four persons bitten by a wolf near Rochelle, eighteen perished. (Andry.) Of twenty-one persons bitten by a raging wolf, sixteen became rabid, and were victims to the disease. And, lastly, in October 1812, nineteen persons were bitten at Bar-sur-Ornain; twelve died with the usual symptoms two months after the accident. (Gazette de Sante, September 1813.)

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[*] London Medical Journal, vol. vi. p. 362.

[†] Memoirs of Medical Society, vol. i. p. 258.

[‡] Philosophical Transactions, No. 37. 1688.

Facts of this description, which are both numerous and well-authenticated, are entirely inconsistent with the idea of the disease being either tetanus, or a variety of tetanus. When similar exciting causes give rise to this disease, at once, in many persons, as after a battle, or in the course of one season, they may, in general, be traced to some epidemic constitution of the season or climate, or to certain peculiarities in the individuals affected. Canine madness, on the contrary, affects all persons sufficiently exposed to its exciting cause indiscriminately; and no exceptions can be traced, unless when it is doubtful that the teeth of the animal have inflicted the wound, or conveyed some of the fluids of the mouth to the wounded surface.

Another fact, quite as strong, may serve to point out a manifest distinction between the specific effects of the bite of a rabid animal, and the symptoms of tetanus. When a wound or laceration is succeeded by the latter disease, a space of time, invariably very short, intervenes between the infliction of the wound and the appearance of the tetanic symptoms. After a battle, for example, a large proportion of the wounded begin very soon, in the course of a few days, or a week, or within two weeks at most, to feel the tetanic rigidity; and the disease never appears after the wound has healed; in other words, after the mechanical irritation has subsided. In persons bitten by rabid animals, on the contrary, we see nothing of this regularity. The hydrophobic symptoms may appear at the close of a few days after the bite, or not for many weeks, or even some months. Indeed, the sooner after the infliction of the injury the symptoms appear, there is the less likelihood of their being hydrophobia; and when the disease comes on after the wound is quite healed, no doubt can be entertained that it is genuine canine madness. Hamilton, for example, doubts whether a single well-authènticated instance could be produced so soon as the tenth day after the infliction of the wound; and from a very extensive survey of cases, he absolutely rejects the idea of rabid hydrophobia taking place before the nineteenth day after the bite, or later than the eighteenth month. In the cases from which Dr John Hunter drew up his account for the Medical and Chirurgical Society, the interval between the infliction of the bite and the appearance of the disease varied from thirty-one days to seventeen months. The most common period was about forty days, which corresponds pretty well with the result of Dr Hamilton's inquiries, which gives the majority of cases between the thirtieth and the fifty-ninth days inclusive. Upon the extent of this interval, which he terms the *period of incubation*, M. Trolliet has come to no positive conclusion. The above observations, therefore, of Hamilton and Hunter are of greater value; and we regret that they appear to be quite unknown to both our authors.

But if further arguments were wanting, they might be found in the fact, that genuine hydrophobia never follows the bite of any other animal than one of the canine family. We are aware that this has been controverted, and that cases of hydrophobia, said to have followed the bite of the cat especially, are recorded by Morgagni, by Fothergill, by Vaughan, by Rossi, and others, and are ready to be adduced as proofs of the disease following the bite of other animals also. None of these cases, however, it may be observed, are free from objection; for, if attentively examined, they will appear either to be tetanus, tetanus with hydrophobic symptoms, or a sort of non-descript malady, with great nervous disorder and cerebral excitement. Further, in no well-authenticated case does the animal appear to have laboured under *rabies*, or to have died rabid. In short, unless the characters of the disease be defined by restricting it to that succeeding the bite of the canine species when affected with *rabies*, it is impossible either to reason accurately, or to lay down any positive conclusions regarding it.

By an exclusive process, therefore, of inquiry, we come to the conclusion, that it must be something different either from fear or apprehension, or from the mechanical injury inflicted on the parts, which is the material cause of canine madness; and this something almost all authors have agreed to be a morbid poison, peculiar to the dog-family, susceptible of being spontaneously generated in them, and of being communicated to other living beings by their bite. To demonstrate more directly the possibility of producing the disease independent of the nature of the wound, or of the mechanical injury necessarily inflicted by a severe rent or laceration from the teeth of an enraged animal, the experiments of Dr Zinke of Jena, and of MM. Magendie and Breschet of Paris, may be mentioned. The former inoculated several animals with the saliva of a dog recently dead; and he communicated the disease to a dog, a cat, a hare, and a cock. Magendie and Breschet, at the Hotel-Dieu, on the 19th June 1813, took the saliva of a rabid patient, named Sarlu, immediately before death, conveyed it in a bit of lint to the distance of twenty paces from his bed, and inoculated by simple incision two healthy dogs. One became mad on the 27th July, and bit other two, which then propagated the disease the whole summer.

The nature of this *virus*, as it has been named, is little understood. It has been long supposed to reside in the salivary fluid, and to be produced by the salivary glands. This supposition, however, never rested on any very solid foundation; and it has been entirely denied by M. Trolliet, who makes the canine or rabid poison to reside in the glutinous slaver or mucus *(bave)* which is secreted by the inflamed tracheo-bronchial membrane. The proofs of this opinion we have in some sort already brought before our readers. We do not think we could add to their force. They are of equal, if not superior strength to those which could be adduced in favour of the old notion of the diseased state of the salivary organs. But whether this mucus is or is not the actual vehicle of the canine poison, we feel incompetent to determine. M. Trolliet honestly confesses that the morbid virus escapes the scrutiny of our senses, and our means of analysis. M. de Saint Martin admits that its nature is quite unknown; but, preposterously enough, spends many pages of obscure remarks and useless reflections in meditating on its operation. It is manifest, that it is still unknown unless by its effects; and that, though we must, of necessity, admit the existence of some material agent as the source of the singular and fatal disease of which we have been treating, yet we are utterly unable to recognise its presence by distinctive characters, or subject it in any form to sensible examination. To an agent so little known in its nature, and so peculiar in its effects, it would be absurd to apply the laws which are known to regulate other morbid poisons Unlike any of the animal poisons, it neither affects nor kills immediately after insertion; and though it resembles some of the morbid poisons in the variableness of the interval after which it produces its legitimate effects, it is utterly unlike them in the great length of that interval, as well as in the peculiar kind of effects which it causes.

It is unnecessary to follow our author in his inquiry into the affinity or relation of the rabid virus with the various animal fluids, all of which, except the bronchial mucus, he shows to be perfectly harmless, and incapable of communicating the disease. A more curious, if not more useful inquiry, is that concerning the channel or means by which it enters the organization. From various facts recorded by good authorities, from the experiments of Bosquillon and his own experience, M. Trolliet infers that the rabid virus does not penetrate the skin, and is not conveyed from the dead body by a puncture received in dissection. On the possibility of its penetrating the mucous membranes he has greater difficulty in deciding. The facts which he quotes are not decisive on either side of the question; and the analogy which he traces between the rabid virus and the poison of serpents is insufficient. When the facility with which the mucous epidermis may be detached is remembered, and when it is certain that the poison applied to a wound will be followed by the disease, there is undoubtedly some ground for the fears expressed by Hamilton, that it is not absolutely impossible for the disease to be communicated by the simple application of the poison to these membranes. Various other questions come under discussion; but this article has already extended to such a length, that we must conclude with a few remarks on the treatment proposed by our authors.

It seems to be agreed by both, that no successful method of cure has yet been discovered, after the disease has fairly commenced; and it appears to be an essential character of canine madness, that, after the characteristic symptoms have appeared, the disease goes on invariably to the fatal termination. Thus, neither the belladonna of Munch and the Germans,—nor the most thorough mercurialization by friction, &c.—nor blood-letting to fainting,—nor the aqueous solution of chlorine, nor the acetic acid of the Italian school,—nor injection of opium into the veins, as practised by Dupuytren and Magendie, are a whit more efficacious than was the Tanjore medicine, the Ormskirk medicine, or any other vaunted specific. Nor is the preventive method of pursuing this treatment after the infliction of the bite, and previous to the appearance of actual symptoms more availing.

The duty of the medical adviser, therefore, is limited to the local treatment of the wound; and both authors concur in admitting the expediency, if not the necessity of the old measure of extirpation by the knife, or removal by cautery, actual or potential. The appearance of hydrophobic symptoms, however, afterwards, in cases where these measures had been adopted at the first, and performed under the most favourable circumstances, presents an objection to their use, which is not diminished by the fact that, in many instances, complete extirpation of the bitten parts is almost, if not altogether, impossible. A portion of head or face may be so extensively lacerated, that to cut out or cauterize every little spot which has been penetrated by the teeth of the animal, would be a remedy as bad as the disease, and perhaps not less serious in its effects.

Notwithstanding these objections, both authors agree in the expedience of caustics, and especially of the chemical escharotics. The butter of antimony (hydrochlorate) appears to be the one which is preferred, perhaps on account of the facility with which its deliquescent character is supposed to enable it to penetrate the innermost recesses of the most irregular wounds. M. Trolliet, however, admits that not even this method is infallible, unless the greatest care be taken in its application. It is on this account that he prefers thorough and diligent washing of the wound with water, while it still bleeds; to treat it afterwards with frictions of oily or adipose substances, when its surface is dry or suppurating; and thirdly, to employ caustics only when the cicatrix is begun or finished. For the two last processes it is difficult to perceive any good reason. The merit of the first is recommended by the fact, that most of those who escape the subsequent effects of a bite from an animal undoubtedly rabid, have washed the wounds copiously with water; and it is on this account that the treatment recommended by Dr Haygarth, nearly forty years ago, is still, perhaps the safest and the most effectual that can be employed. "When a person is bitten," says this ingenious and sensible practitioner, "the plain and obvious means of preventing any future injury, is first to wipe off the spittle with a dry cloth, and then to wash the wound with cold water. After a plentiful affusion of it, warm water may be applied with safety and advantage; and not slightly and superficially, but abundantly, and with the most persevering attention; in bad cases, for several hours a continued stream poured from the spout of a tea-pot, or tea-kettle, held up at a considerable distance, is peculiarly well-adapted to the purpose."

ART. V.—*Beiträge zur medizinischen Statistik und Staatsarzneikunde, &c.*

Contributions to Medical Statistics, and Political Medicine. By JOHN LEWIS CASPER, M. D. Physician and Lecturer at Berlin, and Member of various Learned Societies.

1. *On Suicide and its increase in the present day.* 2. *On the condition of the Poor and Sick at Paris.* 3. *On the Mortality of Children at Berlin.* Berlin, 1825. 8vo.

THE treatise of Dr Casper, of which we propose to present our readers with an analysis, is one of the most interesting contributions to medical statistics that has appeared during the present century. The first and last sections, to which we shall confine our attention, have been compiled, with unwearied labour and much discrimination, chiefly from a very extensive and circumstantial set of reports, returned annually to the Supreme Board at Berlin by the civil medical officers of the various districts of Prussia; and his observations and inferences are illustrated occasionally by such documents as are supplied by the more meagre and imperfect sources of information, which our own country and France can furnish. Some of our readers will perhaps think that there is not much novelty in the facts and doctrines which the author has thus laboriously established. But they have a higher claim to regard than mere novelty; they establish, on satisfactory evidence, many points which have long been merely matters of doubtful opinion; and they settle some important questions which have been, for some time, a subject of keen controversy among physicians and political economists.

The first subject he treats of is Suicide, and the Causes of its Increase in the present day. It is only of late years that suicide has been made a subject of investigation as a part of medical statistics; and the treatises and reports hitherto published on it, have been, with a few exceptions, either too vague and declamatory, or founded on too narrow a sphere of observation. The inquiries of Dr Casper, on the other hand, are confined to strict facts. His inferences are drawn chiefly from the reports of the kingdom of Prussia, and sometimes from those of Berlin, taken for a series of fifty years. Results drawn from so wide a field, therefore, cannot fail to be highly valuable, particularly for settling the true value of the conjectures to which his predecessors have been led from more limited data. And, accordingly, we shall presently find, that he has been enabled to correct several notions which have long been very generally entertained.

There can be very little doubt that, since the beginning of the present century, the practice of suicide has increased to an extravagant and distressing degree. It is impossible to ascertain the fact numerically with respect to our own country; but the increased frequency of self-murder, especially in the upper ranks, is a matter of general notoriety. In Prussia, and above all in Berlin, its increase within the last sixty or seventy years is almost inconceivable. It appears from the Berlin reports for seventeen years subsequent to 1758, that, during that period, among 80,000 deaths, there were only forty-five cases of suicide, or about one in every 1800. In the ten years succeeding 1787, the proportion was exactly doubled, being one in 900. In the ten years subsequent to 1798 it was trebled; and in the ten years ending with 1822, it had increased to the appalling proportion of one in a hundred,—the deaths being about 58,000, and the suicides 546.

Even this number, however, does not represent the true number of suicides; because at Berlin, as in other great cities, cases of suicide are often returned under some other denomination. Of those found in the river in particular, it is probable that a large proportion drown themselves. It is not easy to determine what the proportion actually is. Accurate inquiries, indeed, made in Paris in 1820, lead to the conclusion, that the proportion for that city is about 64 per cent. of the drowned; but of course, this result cannot be transferred to a city so different in many respects as Berlin.

Although Berlin is thus unfavourably circumstanced, Dr Casper maintains, that it is by no means so in regard to other great cities. Thus, according to the proportion of the ten years ending with 1822, there are annually thirty-four suicides in every hundred thousand inhabitants. But in Paris the proportion is forty-nine, and in Copenhagen one hundred. He likewise endeavours to prove, that the proportion is more favourable than in London, and joins Esquirol and Falret in denouncing the late calculations of Dr Burrows as quite inconclusive and unworthy of confidence. A few years ago, Dr Burrows, in his work on Insanity, compared the tables of mortality in London with those of several continental cities; and, after acknowledging the incorrectness of the London tables, and making a most ample allowance for their inaccuracies, arrived at the unexpected result, that suicide,—the *English malady*, as our continental friends call it,—is actually much less common in its native soil than in the districts to which it has been transplanted. As was to be looked for, this statement was keenly attacked by our neighbours on the other side of the channel, and, in particular, it was handled in a spirit of true ultra-national virulence by Esquirol and Falret.* To their objections Dr Burrows has made, in our opinion, a satisfactory reply in the Medical and Physical Journal for 1822; and, at all events, even granting that the allowance made by him for inaccuracies, ample as it was, is insufficient, it is impossible for his antagonists, by the greatest possible additions taken from the correlative articles in the London tables, to contradict the general statement,—that suicide is less common in London than in Paris, perhaps even than in Berlin. Dr

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* Esquirol—Article *Suicide* in the Dictionnaire des Sciences Medicales.
Falret, de l'Hypochondrie et du Suicide. Paris 1822.

Burrows's computation of twenty annually for every hundred thousand inhabitants may be too low; but no ingenuity can enable Esquirol, or his pupil, to raise it to the Parisian ratio.

Our author has joined the cry of his countrymen and the French against us. But he has not advanced a single fact on the subject, which Dr Burrows did not previously concede; and he contents himself with the simple asseveration, that the answer in the Medical and Physical Journal is not satisfactory. This is a solitary departure from the system of strict induction, to which he adheres throughout his work. But it is not to be wondered at, considering how much is said every day, and in every tongue, about English spleen and blue devils,—and still more, how glowing a picture has been drawn by a late popular author in Germany of the suicidal *diathesis* of the citizens of London. We allude to Professor Osiander of Gottingen, who has overstepped all other writers in the extravagance of his assumptions, and the wide range he has given to his fancy.* Every good story told in his work is told of an Englishman. He even seems to hint, that the Germans have become addicted to suicide merely in consequence of their national imitativeness. But his bias and humour are nowhere more conspicuous than when he treats of its causes. There is hardly a single article in an Englishman's cellar or larder which does not receive a share of his denunciations: London ale, porter, especially Whitbread's Entire, turtle-soup, plumb-pudding, nay, even the fat cattle of Smithfield, are all, in his eyes, so many auxiliary causes which fatten the belly, develope the *English malady*, and doom us to be the laughing-stock of the continentalists.

No one, after reading Osiander's quaint and richly-coloured stories, can expect that his countrymen will easily surrender to the cold calculations of arithmetic a conviction which forms the ground of so many excellent jokes against us. Yet we repeat, that statistical observations are decidedly on the British side of the question; and if farther evidence is required, it may be found in the comparative circumstances in which the crime occurs in England, and on the continent. Of this nature are two startling facts, which have been supplied by Dr Casper himself, and which it may be right to mention, on account of their influence on the present question, and the light they throw on the increase of suicide in the present day. The one is the extraordinary frequency of it among children in Germany. Between 1788 and 1797, or in a period of ten years, only one boy committed suicide; in the next ten years, the number had increased to three; and in the ten years ending with 1822, the number was thirty-one!! In Britain a case of suicide under the age of puberty is almost unknown. The other fact to be mentioned, and one perhaps even more extraordinary, is the institution of Suicide-Clubs! Not long ago there was a club in Prussia, consisting of six persons, who had resolved to kill themselves, and who frequently sported their opinions in public, with the view of attracting members. Their companions of course ridiculed them as mock heroes, and little notice was taken of their folly, till three instances of suicide occurred among them. The public attention was then directed to the rest, and it turned out that they all adhered to the laws of the club, the sixth member having wound up its affairs by shooting himself in 1817. A similar club existed lately at Paris, which was composed of twelve persons; and the rule of the club was, that one member should be chosen annually to kill himself for the instruction and encouragement of the society. With such facts as these before us, we must say we see little reason at least for retaining, in the present day, the bye-name which has been attached to the crime of suicide by continental authors.

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* Ueber den Selbstmord, seine Ursachen, &c. 1813.

Besides the proofs we have already mentioned of the increase of suicide in modern times, Dr Casper has added some striking facts regarding its increased prevalence in small towns. These, however, must be omitted for brevity's sake; and we shall now proceed to give an account of his statistical inquiries into the operation of the various causes, real or supposed, which have promoted its progress.

The first noticed is *climate*, *season*, and *weather*. A great deal of importance has been attached to these circumstances,—a cloudy climate, irregular season, and damp weather, being generally conceived to be connected with a great disposition to suicide. The observations of Dr Casper lead to the conclusion that they are of no consequence. It is doubtful, indeed, whether much regard can be paid to what he says on the subject of climate; because, although it may be quite true that the proportion of suicides is very different in countries of the same climate, and that it has diminished and increased in different ages in the same country, while the climate has continued the same, yet in the instances quoted in proof of this, the collateral circumstances are not similar. On that account, for example, it is improper to contrast, as he has done, Holland with England, or the ancient Romans with the modern Italians. But the facts he has collected from the Berlin tables are quite satisfactory so far as regards season and weather; and it is, therefore, no great assumption to infer that climate is equally unimportant.

He has observed for sixty months, namely for the five years ending with 1822, the highest, lowest, and middle point of the thermometer and barometer, and the prevalent winds; but has been unable to discover any relation to the number of suicides. On comparing together, from these observations, twelve months in which there were but fifteen suicides, and twelve others in which there were eighty-six, he found that, upon the whole, there was not any material difference between them as to the state of the atmosphere. On the other hand, on taking months which differ very much from one another either in temperature or barometric pressure, or the state of the wind, the number of suicides turns out to be nearly the average.

It is generally thought that the number is greatest in cloudy or moist weather; and Osiander and others have stated their belief that it is unusually great in the heat of summer. The following facts contradict all these ideas. At Berlin, there were in 1818 fifty-nine cloudy days, in 1812 one hundred and seven; and the suicides were in the former fifty-two, in the latter thirty-six. In 1820 there were only forty-seven hot days, in 1821 seventy-four; while the suicides were fifty-nine in both years. In 1816 there were seventy-six wet days, in 1822 two hundred and fifteen, yet only forty-seven suicides in the latter, and the high proportion of seventy-eight in the former. We need not follow the author through the numerous statements he has collected to the same effect. It is sufficient to mention, that they all tend to the same result,—either that the weather has not any influence, or at least that its influence cannot be perceived amidst the co-operation of more powerful causes.

He has not been able to detect any greater connexion with particular seasons or particular months. Thus comparing together the tables of Berlin, Hamburg, Westminster, and Paris, he finds that, in the first, the order of the seasons as to the prevalence of suicide is summer, spring, autumn, winter;—in Hamburg, summer, winter, autumn, spring;—in Westminster, winter, summer, spring, autumn;—and in Paris, summer, spring, winter, autumn; so that the order is different in each city. A similar difference exists in the "hanging months" of each place. Nay, they appear to be also very different for the same place at different periods. In the seventeen years ending with 1774, the suicidal months at Berlin were April, June, and December; in the six years ending with 1786, they were April and May; and in the eleven years ending with 1822, they were April, September, and August. Contrary to the general notion, the dismal months of November and December do not stand prominent on the list of any city.

The next cause, whose operation he investigates, is the general one of *civilization* and *refinement.* This head is too comprehensive in its import to be capable of having its influence expressed in numbers. But our author gives a very good idea of the enormous extent of its influence, in the first place, by alluding to the frequency of suicide in all the highly cultivated countries of Europe, compared with its total absence in all uncivilized nations, whose institutions do not countenance or enjoin it; and, secondly, by referring to the relative proportion in towns and in the country. In the towns of Prussia, the proportion annually is fourteen in every 100,000 inhabitants; in the country it is only four.

Sex appears to have an important relation to the number of suicides; and the relation depends on the relative consequence and employment of females in the business and intrigues of society. It is a singular fact, that the proportion of females who commit suicide is far larger in Paris than in Berlin; the proportion for Paris in the six years ending with 1823, being 734 out of 2120, that is one-third of the whole, and that for Berlin in the ten years ending with 1821, being only eighty-five in 727, or one-sixth of the whole. This difference must evidently arise from the more conspicuous station which females hold in French society, and their consequent exposure to the moral causes of derangement of the mind.

The Berlin tables do not supply the means of judging what is the influence of *Age*, in other words, at what age suicide is most frequent; because the returns are not complete as to this article. So far as they go, however, they show a lamentable frequency of it in the periods of life which are least liable to its other predisposing causes; for a considerable number has occurred of late among very old men, and before puberty. In 1818, and five years and-a-half succeeding, eighteen cases of suicide occurred in persons under the age of puberty, and eleven in old men above seventy. The latter fact is extraordinary, as Berlin is noted for the provision made for the infirmities of the aged poor.

The Berlin tables are likewise incomplete on the subject of *trade*. And even although they had been more complete, our author has rendered the data useless, by omitting to mention the relative number of persons engaged in the several trades he specifies. Suicides appear, however, to be most common among weavers and soldiers. The cause of its prevalence among the former is evidently their liability to hypochondriasis, melancholy, and fanaticism, arising from the unvaried, sedentary, and mechanical nature of their occupation. But the cause of its frequency and increase among the military is not so clear, as their condition has been very much improved of late years; and, in particular, *the great* cause of suicide among them, frequent and cruel corporal chastisement, is now abolished in the Prussian army. It can only be ascribed, therefore, to their more general depravity produced by the gradual diminution of marriages among them, and by their living so much together in barracks.

A very remarkable fact in regard to the influence of profession on suicide, is, that it abounds on the continent, and particularly, as appears from Dr Casper's inquiries, at Berlin chiefly in the lowest walks of life, while in Britain it occurs most frequently in the middle and higher ranks. The cause of the fact, as regards the continent, has been sought for by our author in the increasing frequency of drunkenness.

Drunkenness he considers one of the prime causes of the increase of suicide in the present day; and he has drawn a very strong, and, we believe, very correct picture of its effects. It appears that nearly a third of the cases of insanity in Berlin arise from excessive drinking. It appears, too, that, owing chiefly to the increase of this vice, the proportion of cases of insanity to the general diseased population is rapidly increasing. Even since 1819, when the proportion was one in twenty-five, it increased progressively to 1822, when it had become one in twenty-two. Such being the fact, it is natural to expect that a large proportion of suicides originate in the same cause. Accordingly, between 1812 and 1821 inclusive, the cases of suicide from drunkenness formed a fourth part of the whole. Even this immense proportion, however, probably does not represent the actual fact; for many of the cases put down under the head of discontent in marriage, bankruptcy, and insanity, have probably arisen from the same cause. The vice of drinking has evidently risen to an extraordinary height in the capital of Prussia, as will appear from the number of spirit shops in relation to the private dwellings and inhabitants. In 1822, there were 1525 spirit-shops and taverns of the denomination frequented by the lower orders, being about one to every four dwelling-houses! The population of Berlin that year was about 200,000; so that each shop was supported, on an average, by only 130 persons! This is an alarming fact. For, if we reflect that a considerable number must be deducted from the 130 on account of sickness and infancy, it follows, both that a very great proportion of the remainder must frequent the shops and taverns, and that the quantity of spirituous liquors consumed by each must be very large, otherwise it is impossible to conceive how the tavern-keepers could thrive as they are said to do. In Paris, the proportion of inhabitants to the taverns and drinking shops is twice as great as it is in Berlin, and the proportion of these shops to the dwelling-houses not quite one-half.

After a few unimportant remarks on the influence of the passion of love, and the fear of punishment in causing suicide, the author next draws a curious comparison betwixt the chief nations of Europe, as to the influence of national character and customs on the prevalence of the different kinds of suicide. In England and in Germany, it seems, by far the most frequent method of committing suicide is by hanging; in Paris, the favourite mode is jumping over the bridges and out of windows. In Berlin, more than two-fifths of the suicides in a period of ten years were cases of death by hanging, while in Paris this description of cases forms only a tenth of the whole. In Berlin, those killed by leaping from windows, or into the river, form together only a seventh, while in Paris the former amount to a ninth, and the latter to two-fifths. The reason of this difference is, that "the Englishman and the German buries his grief in private, and without noise puts an end to his joyless life in his solitary chamber; but the Frenchman likes to bring himself on the scene even at this frightful moment, to end his life with éclat, and to make of himself a *spectacle* and subject of talk to all the neighbours of his quarter."

A very interesting question is the influence of various *Religions* on the prevalence of suicide; and our author has set this at rest by a series of valuable observations on the catholic and protestant states of Prussia,—a country which is particularly well adapted for investigating the subject. From some investigations in Switzerland, Blumenbach was led to infer that suicide was much commoner among catholics than among protestants; and he declares he found it more common in some calvinistic districts than even in London, which was then believed to be its very focus. More lately Dr Burrows has remarked, that insanity is less frequent among the catholics than among the members of the established church in Britain; and Osiander maintains in general terms, that protestantism tends to increase suicide, and imputes its comparative rarity among catholics to the faith which all sincere catholics have in the necessity of confession and extreme unction as passports to heaven, and the impossibility of procuring them when they commit self-murder. A good deal may be also attributed to the principles of the catholic religion being less favourable to the growth of fanaticism and religious melancholy. But whatever may be the cause, the returns from the Prussian states leave no doubt as to the fact, that suicide is comparatively much more frequent among protestants; for its prevalence follows pretty nearly the ratio of the protestant inhabitants in each state. In the territories of Brandenburg, Pomerania, East Prussia, and Saxony, the inhabitants of which are chiefly Evangelical, the proportion of suicides annually in a hundred thousand inhabitants, is on an average nine and-a-half, and in some of the states even fourteen. In Siberia, where five-ninths are protestants, it is nine. In West Prussia, where both religions are nearly equal, the proportion is only six. In Posen, in which the catholics form two-thirds of the population, the proportion is five. In Westphalia the proportion of catholics is three-fifths, and of suicides three. In the two Rhenish provinces of Cleve-Berg and the Lower Rhine, the proportion of catholics is seven-ninths, and of suicides only two. It further appears, that it is exceedingly rare among the Jews. There are two reasons for this. The poor of the Jewish persuasion are well cared for by their richer brethren; and, what is of more consequence, they have not yet acquired the vice of drunkenness, now so common in Germany, because, on account of the ridicule with which they are every where treated by the lower orders, they dare not frequent the spirit shops and taverns.

This treatise is then concluded with a few remarks on the relative prevalence of suicide and murder, made with a view to the question, whether, in cases of suspicious but doubtful death, their relation to one another may enter into the evidence as presumptive proof. This sort of evidence appears from Dr Casper's observations to have been actually admitted on a trial in Germany, though with what justice, or with what distinct object, it is not very easy to see. The proportion, however, for the Prussian monarchy is one case of homicide to 12⅓ of suicide.

The second treatise, on the condition of the Poor and Sick of Paris, is an abstract of the celebrated Hospital Reports of that city, and is published with the intention of stirring up his countrymen to imitate the practice of their rivals. As it is impossible to give a shorter abstract than he has made of it, and the information communicated may be had access to in other quarters, we shall pass over what he says on the subject, and proceed to the third essay, on the Mortality among Children in Berlin.

This topic, so interesting to the statesman and physician, and so pleasing in its results to the modern inquirer, is treated by our author with a minuteness and accuracy surpassing every thing that has hitherto been published on the subject. He commences by noticing shortly the chief statements that have been made as to the mortality among children in the great cities of Europe; and he remarks, that the result of the inquiries which have been made regarding it, is even more distressing than we could have been led to anticipate from considering its causes. The principal facts from which he sets out are taken from the

Tables of Süssmilch; the Parisian Documents published in the Dictionnaire des Sciences Médicales; the London Bills of Mortality; and the work of Wertheim on the Medical Topography of Vienna. From these documents, it appears that Berlin is rather more favourably circumstanced than the other capitals of Europe. Nevertheless, according to the researches of Formey on the Medical Topography of Berlin, published in 1796, the deaths at that time among children under their fifteenth year were somewhat more than a half of the general mortality.

The first point Dr Casper considers is the relation of the Still-born to the Living births. Very discrepant statements have been given respecting it by authors. From various documents collected by Casper, it is stated to be 1 in 24 for London and Vienna, 1 in 36 for Stockholm, 1 in 19 for Dresden, 1 in 33 for Brunswick, 1 in 15 for Hamburg, 1 in 19 for Paris, and so high as 1 in 11 for Strasbourg. These differences are so great that they must arise in part from defects in the sources of information. In Berlin, it is singular that the proportion has continued nearly the same for the last fifty years. Thus between 1758 and 1778 the proportion is 1 to 19; and since 1785 down to 1821, the proportion is 1 to 19½. This fact proves that many essential improvements must have taken place in the art of midwifery, as the political causes of miscarriage are now more numerous, and in more vigorous operation.

The chief of these causes is the increase of births out of wedlock. It is established on the strongest evidence, that abortions and still-births are much more common among the unmarried than among married women; and the reason is obviously, that the constitution of the former is generally ruined by their dissipated habits. This is shown very clearly, if we take the extreme case, that namely of prostitutes. In the Venereal Hospital at Paris, two children out of seven are born dead; and in an hospital at Hamburg, containing chiefly venereal patients, the proportion is one in three. Taking the general average, it appears that in Göttingen 3 per cent. of the children born in wedlock are born dead, but so many as 15 per cent. out of wedlock. The difference, however, is not so great in Berlin, the proportion for the years 1819 and 1822 inclusive being a twenty-fifth of the births in marriage, and a twelfth out of marriage. The proportion of males among those born dead is inconceivably great for Berlin: in every 48, 28 are males, and 20 females. This is very much above the general average, which, according to Hufeland, is 21 males for 20 females.

Dr Casper next commences the subject of the mortality among children born alive, with a table of deaths in a period of forty years, commencing with 1780. Taking the average of every eight successive years, ending with 1787, 1795, 1803, 1814,* and 1822, the proportion of deaths under 15 years of age to the number of births, is 51.66, 55.77, 50.42, 60.33, 43.16 per cent. and the average of the whole forty years is 52 per cent. In this summary, the most striking facts are the great diminution in the mortality during the last period, and the great increase in the period between 1804 and 1814, namely, during the wars in Prussia, and its possession by the French. The baneful effect of war is still more clearly shown during the three most unfortunate years of the Prussian monarchy, 1806–7–8; for the mortality under the age of puberty was 71 per cent. of the births, although the births were much above the average. This increase is imputed by Dr Casper chiefly to an increase in the illegitimate births.

As with regard to the still-born, so in the case of the mortality among those born alive, one of the most important causes is *illegitimate birth*. According to the observations of Süssmilch and Baumann, for ten legitimate children who die in the first month, there are lost twenty-four natural children; in the second and third month, the proportion is 2 to 1; in the second quarter it is one and three quarters to 1; in the two remaining quarters of the first year one and-a-half to one; in the second year one and two-fifths; in the third and fourth one and a third; in the fifth, sixth, and seventh, one and a fourth; and of the total number of natural children only one-tenth, or, at the utmost, one-ninth pass the age of puberty. Whenever, therefore, the corruption of manners leads to an increase of illegitimate births, the mortality among children must be liable to be also increased.

It does not appear that Berlin, although the capital of a great monarchy, is so unfavourably circumstanced, as many cities even of inferior size, in respect to the number of illegitimate births. Forty years ago they formed a sixth part of the births in Stockholm, Leipzig, and Göttingen, a seventh part of those in Jena, and only a ninth part of those in Berlin. In Paris the proportion has always been above that of any other great city. Even at the beginning of the present century, the illegitimate births were above 22 per cent. of the whole; and for the years 1820–1–2, they were above 36 per cent.

In Berlin, however, there has been a very rapid increase during the last forty years; and Casper has shown, from a retrospect of the average taken during that period at intervals of five years, that a very great increase was caused by the invasion of the kingdom by the French, and that the capital has not yet recovered the demoralizing influence of that event. For each *lustrum* ending with 1793, 1798, 1803, 1808, the proportion of illegitimate births was 10, 10, 12, and 16 per cent.; and the proportion for the four years ending with 1822 was also 16 per cent.

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* The years 1809, 1810, and 1811, are omitted in the tables, for what reason the author does not say.

If, therefore, the circumstances, under which illegitimacy operated at the time when Süssmilch and Baumann made their estimates, were still in as active operation, there ought to be a great increase of the mortality among children. But, in point of fact, the general mortality is not increased; and we are not a little astonished that our author, whose acuteness is visible throughout his whole work, did not compare together these two facts more carefully than he has done; for, when examined thoroughly, they supply us with some very curious and consolatory information amidst the apparent wreck of morality which the increase of illegitimate births denotes. He has contented himself with observing, that, from accurate tables kept during the ten years antecedent to 1822, illegitimate children form a fifth part of the deaths among those under puberty; that a large proportion of these are lost to the community on account of their illegitimacy; and, in order to explain their sickliness, he adds a short but melancholy picture of the way in which they are usually brought up. But he has quite forgot to compare the relative deaths among legitimate and illegitimate children, with the relative number of the births of each sort; and has thus missed one of the most important facts to which the data he has collected will conduct us. The *total* births in Berlin for the four years ending with 1822, being 26,971, and the total deaths under fifteen years of age being 10,768, the general mortality among children, in relation to the general births, is 40 per cent. The number of *illegitimate* births being 4319 for the same period, and the number of deaths under fifteen being 2135, the proportional mortality among illegitimate children is 49½. This is the proper shape to state the fact in.

Now when we compare this result with the statements of Süssmilch and Baumann, we cannot but be struck with the extraordinary improvement in the mortality of *illegitimate* children. Of course it would be wrong to adopt implicitly numbers taken from so short a period as four years. But still, when it is found that, in Süssmilch's time, only a ninth of the illegitimate children reached puberty, and that in the last four years the proportion is increased to one half, it is impossible to deny that, independently of the other causes which have tended to *diminish the* mortality among children in general, there is a vast improvement in the care and management of those born out of wedlock; and, consequently, that, while the increase of such births betokens a degeneracy of morals in one respect, the fact now stated will indicate a great amelioration in another.

The next cause affecting the mortality to which Dr Casper alludes, likewise relates to the *descent* of the children. It is the increased frequency of early marriages, arising from the facility thrown in the way of the settlement of tradesmen, by the late introduction of liberty of craft. A great number of the deaths among children are said by him to occur among these tradesmen; who are tempted to marry by their first successes, before they are firmly established, and who are consequently thrown into want and misery by the frequency of reverses in trade. It is impossible to estimate the amount of the operation of this cause.

The next cause is the improvements which have taken place in the *Art of Midwifery*. Some German authors have maintained, that the art of midwifery has tended to increase the mortality of puerperal women in great towns. But their opinion has been completely disproved by several of their countrymen, and still more distinctly by the late Dr Willan. The statements of Casper are to the same effect. Between 1758 and 1763 inclusive, the deaths in child-bed at Berlin were one in ninety-five; between 1819 and 1822 inclusive, only one in 152. This proportion is not so favourable as that of Willan taken from the London Lying-in Hospital; but it is more so than the proportion for London generally, which, for the year 1822, was one in 105.

Under the head of *Physical Education*, Casper supplies some interesting general information on the amendments in this respect which have taken place of late in Berlin. It seems that, not long ago, there was an extraordinary negligence or prejudice in regard to free air and exercise in the bringing up of children. They were brought up chiefly within doors in the nursery; in general the nursery was the worst room in the house; and in it was carried on all the nauseous and disgusting part of the household economy. The improvements introduced of late are the abolition of swaddling-clothes, exercise in the open air, the use of clean airy apartments for nurseries, the privilege of entry for the children into the other rooms of the house, so that they are much more under the parent's eye. Some remarks are likewise made on the effect of mothers not suckling their own children, a practice which our author condemns in very strong terms as tending to increase the mortality. He appears to us, however, to have used stronger language than facts will warrant. At least it is certain that, in a great number of instances, the practice is free from harm, and in many is attended with much benefit. On the other hand, we do not doubt that in other cases it is injurious. But the average result on the health and mortality of children has not yet been decided. Loose declamation and scattered facts will never settle it; and as Dr Casper has not been able to bring forward any thing stronger in the shape of argument, he has left the question nearly where he found it.

The last cause of mortality among children which he has noticed, is the important one of their *Diseases*. Under this head it has been an easy matter for him, with such excellent materials, to make out a most triumphant statement for modern medicine. He has shown, that, since the general introduction of the cow-pox, the mortality among children has been very much diminished; and he has completely refuted the assertions of those enemies of vaccination, who maintain, that this advantage has been gained only at the expence of an increased mortality from other diseases. As the documents he has consulted on the subject are highly important, we shall give a full abstract of his results.

According to the researches of Black, Süssmilch and Frank, about eight or nine per cent. of the human race were carried off by natural small-pox. Duvillard endeavoured to show, that of a hundred persons only four reached the age of thirty without having that disease, that one in seven or eight of those who were affected died, and *that of those who were attacked in infancy, only two-thirds escaped.*

Setting out with these facts, it appears that even Inoculation with the small-pox was the means of considerably diminishing the mortality; but its effect was not very distinct, because, unless all children were inoculated, the advantage gained by their inoculation was in some degree counteracted by the increased diffusion of the disease among the uninoculated.*

The effect of vaccination, on the other hand, is clear and distinct; and it is nowhere more admirably shown than by the present state of the kingdom of Prussia. Prussia seems to have got completely the start of most of the other great European kingdoms in the diffusion of the vaccine inoculation. In the French empire, 12,857 persons died of small-pox in 1818 and 1819, which, in a population of 54 millions, gives one in every 4518 inhabitants. In Prussia, the deaths from small-pox in 1820 and 1821 were 3137, which, in a population of nearly 23 millions, gives one in every 7204 inhabitants. In Berlin alone, the average number of deaths from small-pox for the twenty years immediately preceding the general introduction of vaccination in 1802 was 472; for the twenty years following, it was diminished to 175, although during that period the disease had been several times epidemic. Since the founding of the vaccine institution in 1812, the annual mortality from small-pox has decreased to fifty; since 1817 it has been only twelve; and in 1821 and 1822 there was only one death each year.[*] It is not easy to say which of these intervals should be chosen to make the comparison with the period before vaccination. Our author concedes a great deal, however, when he takes the ten years antecedent to 1823. During that period the number of deaths from small-pox, compared to every thousand births, (which he properly considers to be the most uniform standard for the ratio,) has been *nine*, while, before the introduction of the cow-pox, it was eighty-three. Seventy-four lives, therefore, out of every thousand have been preserved by this discovery.

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* See Blane's Select Dissertations.

But what reason is there for the assertions of some of its opponents, that this saving is compensated by an increased mortality from the other diseases of infancy? It is said that measles, scarlet fever, croup, water in the head, are more common than formerly. Undoubtedly they are, to a certain extent, more common, because more children are preserved till the age when they become liable to them. But a great part of the increase is only apparent, and arises most probably from the improved diagnostics of modern physic, in consequence of which a definite name is now substituted for the vague terms in former use. That they are not materially increased is shown satisfactorily by Dr Casper, by referring to the general mortality among children, which is evidently diminished,—and to the mortality from other diseases besides small-pox.

In the twenty years antecedent to the first introduction of the cow-pox in 1799, the proportion of deaths under puberty to the births, was 51 in 100. In the eight years succeeding 1814, it was only 42 in 100. The gain derived from the eradication of small-pox, therefore, is not, in point of fact, compensated for.

Of course, the mortality in other diseases besides small-pox is likewise not augmented. Thus, in the four years previous to 1790, the deaths among children from all other diseases were 39 for every 100 births; while in the four years previous to 1823 they were only 34. Taking special diseases, it appears, that in the first period there were [illegible] deaths from diseases of the chest, or 8½ for every 100 births, [illegible] in the second period [illegible] or [illegible] only. Even measles [illegible] to which has been chiefly imputed the alleged [illegible] have really not been more prevalent [illegible] they were 591, or 14½ for every [illegible] or [illegible] per 1000. This [illegible] as the names of [illegible] unascertained; but any [illegible] in favour of the early [illegible] of Dr Jenner, which so strongly [illegible] country by Dr Watt, we [illegible] enemy of vaccination [illegible]

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[*] In 1823, in which year Hufeland considers the small pox to have been epidemic in Prussia, the cases in Berlin were 200, and five died; and he contrasts these numbers with those in the last epidemic, before the general introduction of the cow-pox, namely, in 1801, when 16,000 were affected, and 1646 died.—Journal der practischen Heilkunde, October 1824.

[illegible] some observations are made [illegible] that vaccination is desi- [illegible] diseases [illegible] from the average mortality [illegible] was one an- [illegible] population, and is now improved [illegible]

[illegible] Dr Jenner we may venture to predict, [illegible] other branches of medical police, a [illegible] so ne- [illegible] one of the most elevated, [illegible] one of the most fascinating [illegible] departments of medicine.

Art. [illegible].—Details of Experiments on a Specific Disease, to [illegible] the Bite of a Dog; with experiments [illegible] Animals, during [illegible] By Robert White, Surgeon, Brighton. London, [illegible] pp. [illegible] 8vo.

On Sunday [illegible] four children, reported to have been bitten [illegible] by a dog supposed to be mad, were brought to Mr Robert White, Surgeon in Brighton, for advice. Of the children, three from the age of seven to eleven, had been slightly bitten on the nose; one named Parching had, at the same time, suffered an additional snap on the ear; and the fourth individual, a boy of fourteen, was bitten on the cheek, which still bore evident traces of two teeth. As the situation of the wounds rendered excision in the opinion of Mr White objectionable, they were at first freely scarified, and, at the suggestion of Mr [illegible], a friend of Mr White, were treated with the liberal application of oil of turpentine, which was followed by some degree of redness and pain. In the course of a few days, during which the children were visited, the wounds had healed. One of them, however, was subsequently taken by its parents to a physician then attending the dispensary of Brighton; and other remedies, local and constitutional, the nature of which is unknown, were employed. Nothing further is recorded of the history of the children, save that the boy was afterwards killed by falling down a well, as he was drawing water.

Mr White went, immediately after the children left him on Sunday, to see the dog, which was in the house of a poor Irishwoman named Boots, residing in Chesterfield Court, and which proved to be a pied bitch of the large turnspit kind, about ten months old, reported to be of the most docile character, and so gentle as to suffer the children to play with her until a few days before. At this time she was observed to become unusually snappish, and the neighbours reported that she had been seen to worry and tear a hen. As the woman went out to daily work, she usually confined her dog in a dark coal-hole in the room, during which seclusion, the animal had frequently passed the whole day without food or water. A short time before Mr White saw the animal, she had eaten very sparingly of food offered to her, but she drank freely of water, and is said to have presented no unusual appearances, but to have appeared lively and playful. When suffered, however, to place her fore-feet on Mr White's knee, she snapped at his hands, and made several attempts to spring at his face, and bite him there, and showed the same desire to attack her owner. As Mr White was holding her with a rope round her neck to prevent such injury, he remarked, that she snapped at flies as they flew past, and at the bright lines reflected by the sun's rays on the articles of furniture in the room. A trifling increase of the flow of saliva about her mouth, Mr White ascribed to the exertions she occasionally made to free herself from the state of restraint in which she was held. After being conveyed in a sack to an uninhabited house, where every precaution to prevent escape is said to have been taken, she was left untied in a room in the same condition in which she had been found, without either victuals or water.

On the following day, May 23d, Mr White went with Dr Martin and Mr Sutton, about three o'clock in the afternoon, to visit the imprisoned animal, whom they found no longer playful as the day before, but peevish. Some raw sheep's liver she carried piece by piece as it was thrown her to a corner of the room and ate heartily, but smelt and pushed about with her nose two dishes, one containing water, the other a mixture of water and oatmeal, drinking but little, though she had been without water for twenty-six or twenty-seven hours. Some strong wooden battens were nailed across the doorway, the door was fastened with a string, and the animal was left for the night.

On the following morning, Tuesday May 24th, Mr White was raised about six by the father of one of the little children, announcing to him that the dog had broken loose. She had about two o'clock torn her way through the battens, forced open the door by pushing against it until she broke the string, and finally made her escape through a window into the street. She had been seen by some people at Hove Brick-yards, about a mile and a half from the place of her confinement, to bite one or two dogs, but had now found her way home, and when Mr White again saw her, she was standing at the step of her owner's door.

Mr White succeeded in securing the brute, after suffering two slight bites on the finger, and one rather severe through coat and shirt on the right arm, and carried her in his arms to his own house, where she was chained in an under-ground kitchen, in which the owner engaged to come and feed her.

On Wednesday the 25th, the manner of the dog was decidedly altered. She had broken successively two chains with which she had been fastened, and having destroyed a third, she was now loose in the kitchen, tearing every thing within her reach to pieces, and gnawing the wood-work of the door. An occasional interval of tranquillity for an hour or two was followed by a paroxysm of worrying, gnawing, and tearing with fresh vigour. At one, when Mr White went to examine her cautiously with the woman, the moment the door was opened she sprung at her visitors open-mouthed. In the afternoon when the woman set in some food and water, *Fan* seemed quiet; but coming to the door after playing, bit her mistress in the cheek. The woman was now alarmed, and refused to feed the dog any longer; but her fondness prompted her to come the next morning, Thursday 26th, when, on opening the door to put in food, the animal tore her again severely in several places on the hands and arm. As Mr White refused either to extirpate or cauterize the wounded parts, the woman applied to Mr Coleman, who treated all of them in this manner except the one on the cheek; but she would by no means continue her attentions to *Fan*, who was therefore now left to the sole care of Mr White, who, hearing her perfectly still in the evening, put in a basin of food and one of water. The next morning the state of quietism continued; but it was the tranquillity of mortal weakness and exhaustion. She betrayed no consciousness of persons or things; her eyes were glassy and deathlike; her breathing was hard, short, and catching, and the jaw was fixed. A basin of food and water was put in about eleven at night; and the following morning about breakfast time, Mr White found the animal dead near the door, with the tongue out of the half-open mouth, and the tail crooked off from the rump, and hanging away from the hind-legs. Several wounds on the legs showed that she had bitten herself during her worrying paroxysms.

Of three basins containing food, she had eaten sparingly of two; the three vessels containing water remained untouched; so that the animal appeared to have taken very little food, and no water after Wednesday evening. The floor of the kitchen was strewed with fragments of a rug, of an old cloak of the woman, and of some of the servant's clothes, which had been left there. She had even gnawn to shreds some bits of cord pendant from the seat of a child's swing. The walls, the door, and every thing within reach, bore marks of her teeth.

On Saturday the 28th, Mr White and Mr Sutton opened the body of the dog in the presence of Drs King and Martin, and found the following appearances: The *liver* of good size, and apparently healthy; the *heart* rather large, and, like the neighbouring vessels, gorged with blood; the *stomach* nearly empty, and presenting the strongest marks of inflammatory action on its inner coat and general substance, and the pylorus so thickened as not to allow any food to pass through it into the bowels; the intestines, throughout all their convolutions, much thickened, and marked by the same appearance of active inflammation; about twenty live worms in the *ileum*; the lungs, on being inflated, without disease, save traces of inflammation, which were also seen about the windpipe and gullet. The root of the tongue was rather swollen, the sublingual glands unusually prominent, and the submaxillary and parotid enlarged; and the quantity of saliva about the mouth was somewhat increased, and peculiarly viscid. The ventricles of the brain contained a trifling collection of fluid; the dura mater presented a scarcely discernible blush of inflammation; the kidneys, bladder, and *uterus*, were healthy.

The foregoing detail, though somewhat abridged, and not a little condensed, exhibits, however, all the essential circumstances of that case of *rabies canina*, which Mr White adduces as competent to invalidate the ordinary and received opinions on the individual existence of hydrophobia in the human subject, and the possibility of its being communicated from the brute creation to the human species. It will be readily perceived, that it presents nothing either very peculiar or highly interesting; and, as it is extremely similar to the numerous cases already on record, of dogs becoming rabid, biting persons and things, and dying rabid, so it will seem difficult to discover by what process of reasoning the author could draw conclusions so little connected with the facts of the case. Though Mr White cannot deny that such a disease as madness takes place in the dog, he calls in question entirely its existence in the human subject, and he denies that it can be communicated to human beings by the bite of a rabid animal.

The process by which the author arrives at this novel result, if divested of the imposing declamation and ambitious tone of false eloquence and small wit in which it is disguised, and separated from the disorderly confusion in which the gay and capricious genius of the author has scattered his opinions, is neither long nor circuitous, and may be comprised, so far as any thing like argument is concerned, in a very few words. The cases recorded as examples of hydrophobia present, he observes, very great discrepancies, which do not admit of reconciliation. The symptoms of these cases, and those described by systematic authors, may arise, and do arise, in the human constitution, independent of the bite of a mad dog. The symptom especially from which the disease has been denominated,—the dread of water *(hydrophobia)*—is not always present, and is not peculiar to it. The effects ascribed to the supposed virus are so dissimilar to those arising from the operation of any other morbid poison, that it is inconsistent with the laws of morbid poisons to ascribe the hydrophobic symptoms to the operation of such a cause. There is no direct experimental proof that a poison, produced either by the corruption of the fluids, or the secretions of dogs termed rabid, really exists. And, lastly, the interval after which this alleged poison gives rise to its genuine effects, is extremely variable, and is, therefore, utterly irreconcilable with the known laws of the animal economy. These form the principal and prominent considerations which have led Mr White to say, with equal force of thought and elegance of antithesis, that " doubt has become the result of honest inquiry, and infidelity has assumed a virtue."

Of these propositions some are undeniably true, and have been admitted long before Mr White thought of using them; others, by far the greater number, are grossly misstated, or downrightly false; and herein consists the whole mystery and essence of the book. Had the problematical ones been demonstrated, or those that are doubtful been established on the solid basis of unequivocal facts and sound experimental inquiry, they would reasonably be entitled to considerable weight; and it would be just to concede to the author the merit of investigating, with scrupulous judgment and diligent research, the evidence of the opinions which he entertains. For this conscientious inquiry, however, the reader looks in vain; and he finds nothing but the old and oft-repeated trick of disguising error in the mask of truth, and diluting, with a small portion of obvious and well-established principles, a great disorderly mass of absurd and ignorant errors. Wherever Mr White ceases to deliver truisms, dogmatic assertion is substituted for argument, and loose and desultory declamation usurps the place of close reasoning.

A mode of inquiry, so vague and so unfair, it would be both puerile and unnecessary to attempt seriously to expose; and his arguments indeed, if simply and distinctly stated, bear on their front their own refutation. The circumstance, however, of a professional person avowing his disbelief in the existence of hydrophobia, and of the impossibility of the canine family communicating the disease to the human race, has awakened a degree of attention which years of observation and inquiry would have been unable to effect; and Mr White, by allowing himself to be bitten by a dog reputed mad, without attempting any precautionary treatment of the wounds, has contrived to thrust himself and his book into a degree of notice, which is merited neither by the result of his poor and foolish experiment, nor by the intrinsic qualities of his writing. Our readers may therefore be desirous to see some specimen of the summary mode in which this gentleman discusses the evidence concerning the existence and contagious nature of hydrophobia. The first extract which we give, will communicate some notion of the manner in which he reasons on morbid poisons, and on their operation on the animal economy.

"The doctrine of the day, as regards the disease called *Hydrophobia*, inclines us to believe, that a specific *virus* is infused, by the bite of a *rabid* animal, into the human system. For the appearance of this disease there seems a want of knowledge, on the part of the medical world, to give any thing like a definite time, to demonstrate what circumstances may hasten, or what delay, its supposed influence on the constitution; or, in fact, to paint the complaint as a whole, a decided, and established likeness.

"That it is not so with other known specific diseases must be admitted. If we inoculate for small-pox, measles, cow-pox, &c. we expect certain characteristic marks of complaint to make their appearance, and we can date a near time for their coming. When they make their appearance, each preserves its likeness, each possesses its 'form and pressure,' unaltered in character, though not wholly uninfluenced by circumstances. It is not so with hydrophobia;—this disease is said to appear in a few *days*, or it may be as many *weeks*; or as many *months* may steal on before it shows itself; nay, even *years* shall pass, and it is said to come at last! But *how* comes it?—*With* certain symptoms, or *without* those symptoms, destitute of 'local habitation'—without even 'a name.'

"Instead of specific order, we have indescribable incongruity; not a lively picture of complaint too descriptive to be mistaken, but a pallet crowded with imposing colours, thrown on without order, disposition, or effect. The symptoms that are reported of *hydrophobia,* if taken in the gross, incline us to believe, that the effects of that imaginary disease are peculiarly directed to the nervous system; but then, the length of time before they are said to make their appearance renders it highly improbable, indeed impossible. Instances of death are related from the bites of serpents—those of the cobra di capella, the rattle-snake, &c. may be adduced as instances. Hasty death ensues after the infusion of this poison; and yet its effects are generally allowed to be employed on the nervous system. Either this received opinion then is incorrect, or we must look for another theory to explain the effects of *hydrophobia.* Let it then be received into the system by the absorbents—why is it so long latent? The general circulating medium would soon be affected—the whole human machine in all its parts would receive its influence! Analogy here again condemns the reasoning, and saves us from a greater blunder, if we follow this theory. Why is it so long latent?"

Unable to trace any similarity between the rabid *virus* and that of small-pox, cow-pox, measles, &c. or to perceive how a material poison, believed to be absorbed, can remain dormant, or without giving rise to obvious effects for a variable, sometimes a very long period, he treats with brief and unceremonious sneer the idea, that it may remain inert in the wound, until called into action by certain favourable peculiarities of constitution.

"This theory seems beggared by a want of inquiry into the causes that bring the, before inert, *virus* into action, and give a mischievous tendency to what may have remained for years a mere 'inert and unaltered' lump, and, as little participating in, or affecting the constitutional functions, as a pea in an issue—not so much so indeed, as producing no irritation."

As this explanation is equally unsatisfactory, he lays hold of that proposed by Mr Blaine in his "Canine Pathology, on the principle of absorption and re-irritation," and after two or three hearty shakes, in which he is outrageously sarcastical and witty about its obtaining a seat at the Biliary Board, or taking the Chiltern Hundreds in the sanguiferous system, tosses it away with the greatest contempt in the world.

Having thus disposed of the supposition that the bite of a rabid animal conveys a specific morbid poison capable of generating a peculiar disease, he consistently enough ascribes the symptoms which physicians have grouped together under the name of *hydrophobia* to very different causes. In the first place, Where the bite of a diseased animal has clearly preceded the disease, he contends, that no morbid poison is inserted, and he adopts the well-known and familiar explanation derived from the similarity of hydrophobia and tetanus. Secondly, Where the bite of an animal *not* diseased, has been ascertained to have preceded a train of symptoms said to be hydrophobic, they have not arisen from the bite as a source of morbid poison, but may be tetanic; or, by the operation of the patient's fears, and the frightful certainty that his veins are infected with a deadly poison, he may be attacked with a mortal phrenzy, or a train of nervous disorder not less excruciating and fatal. Thirdly, In some instances, hydrophobic symptoms have appeared in persons who could not remember that they were bitten, or who never were bitten; and these symptoms, which ignorance, superstition, or faulty observation has hitherto ascribed to the operation of a peculiar morbid poison, inducing a specific disease, arose from no such cause, but from preternatural excitement, resulting either from direct disorder of the brain, or from the operation of certain powerful mental emotions.

It is almost unnecessary to remark, that these opinions have not even the merit of novelty to recommend them, so far at least as the possibility of confounding hydrophobia with tetanus exists. Physicians have been so well aware of the resemblance between the symptoms of these two diseases, that scarcely a single author has omitted to remark it, and to impress the necessity of drawing an accurate distinction. It is surely superfluous to remind our readers how much this point of diagnosis has been enforced by Vaughan, by Mease, by Girdlestone, by Hamilton, by Dr John Hunter, and in short by every author who has at any time treated of the disease. With regard to the idea which he seems to announce, if he announces any thing, that hydrophobia and tetanus are identical, if Mr White had not been grossly ignorant of the literary history of the disease, the existence of which he so boldly questions, he could never have proposed, with the triumphant air of a discoverer, an opinion which can boast of defenders and opponents too, greatly more ingenious and rational, if not more zealous, than Mr White.

It is by no means likely, that such a writer has heard of the names of Bosquillon, of Girard, and of Simon, who preceded him in this career of singularity, and who have utterly deprived Mr White of any little merit he might have claimed by asserting that the disease is either imaginary or entirely independent of the operation of an animal poison. Bosquillon, for example, who wrote in 1802, denied the existence of any rabid virus entirely, and, ascribing the symptoms which are admitted to follow the bites of rabid animals to the effect of fear only, considered the disease termed *hydrophobia* as entirely imaginary.[*] Not much unlike, Girard, in a Treatise in 1809, ascribed the hydrophobic symptoms to the mechanical injury inflicted on the parts, and the nature of this injury, as a contused and punctured wound, and regarded the disease as a variety of tetanus;[†] and he further asserts, that he could at any time produce the appearance of hydrophobic symptoms in dogs, by inflicting on them severe lacerated wounds,—the ordinary exciting cause of traumatic tetanus. And, lastly, M. Simon, a disciple of the school of M. Broussais, adopting the opinion of Girard on the nature of hydrophobia ten years after, ascribes its symptoms to an irritation lingering in the wound, to which there is an excessive flow of blood, in consequence of the want of due discharge by suppuration.

Previous even to the time of these writers, persons were not wanting in this country to question the existence of hydrophobia as an individual disease in the human subject; and several physicians in this city remember the time when certain professional characters ridiculed the idea of such a distemper being communicated by the bite of a dog. It is by no means too strong an assertion to say, that such violent deviations from common opinion are to be regarded as the hallucinations, not of genius, but of eccentricity, and the love of being singular,—a sort of monomaniacal delusion, originating in innate incapacity to distingush the specious from the true; or to perceive, that half-a-dozen, or even half-a-score of bad and inconclusive cases, are by no means competent to disprove inferences founded on an equal or even a smaller number of pointed, precise, and well-reported facts. So long as men are liable to err from imperfect observation, and errors of the senses, medicine, like every other natural science, will have its share of erroneous facts and misstated cases; but it would be as absurd to impugn the whole science on account of these partial blemishes, as it would be to assert that judgment and reason were denied to the whole human race, because some unhappy individuals betray no marks of either of these faculties.

That Mr White has not been able to steer clear of this vulgar paralogism will not be matter of wonder to any of his readers, when they are told, that, among many undoubted and well-authenticated cases of canine madness in the human subject, reported by authors of the most accurate observation and unquestionable credibility, he has either not chosen or not been able to collect more than three, for the purpose of substantiating his assertions regarding the nosological errors of all former observers. The first of these has never before been published, and now makes its first appearance for the express purpose of betraying its dubious character, and showing to advantage the argumentative refutation of Mr White. The second is that published in the 21st volume, (p. 53,) of the Medical and Physical Journal, by Dr Pinckard; and as it was not certain that the animal by which the patient had been bitten was actually rabid, it speciously enough affords Mr White the pretext of calling it a case of inflammation of the stomach and œsophagus. The third case adduced by the author is that of Lindsay, recorded by Dr Bardsley of Manchester, which is certainly not entirely free from objection, as an instance of canine madness, and has been long ago criticized by Dr Robert Hamilton, who regarded it as a frenzy with hydrophobic symptoms, (p. 263.) Mr White, therefore, has been extremely fortunate in his choice of cases for demonstrating the verisimilitude of his own opinions, and the falsity of those of others. But it is to be regretted that this is the fortune either of ignorance or of illiberal misrepresentation; and to all who know the ample materials from which general inferences might have been deduced, will afford a notable instance of the facility with which some writers get up a new theory.

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[*] Mémoire sur les causes de l'Hydrophobie, vulgairement connue sous le nom de Rage, et sur les moyens d'aneantir cette Maladie. Par E.-F.-M. Bosquillon. Paris 1802, en 8vo.

[†] Essai sur le Tetanos Rabien. Par M. Girard. Lyons, 1809, p. 31.

To pass over the many well-authenticated cases recorded in the journals and scientific transactions of France, Germany, and Italy, and especially the valuable reports published in 1783 by the Society of Medicine in Paris, could Mr White forget, or was he ignorant of the cases recorded in our various domestic publications, from the London Medical Observations and Inquiries, the Transactions of the College of Physicians, and the Edinburgh Medical Essays, down to the Medico-Chirurgical Transactions, and other periodical works of the present day. Had he put himself to the trouble of consulting and examining the cases consigned in these works by physicians of equal observation and much more learning than himself, we think there is not a doubt that he would have saved himself the labour of writing, and us that of reading, the idle declamation with which the present little work abounds. He would there have found evidence, which, unless he laboured under an obliquity of perception perfectly unparalleled, and was not only unable, but unwilling to see the truth, would have been amply sufficient to have prevented him from exposing his ignorance in the manner in which he has done.* He would there have found cases of canine madness in the human subject, which could not have been explained away, as those of Mr Battcock, Dr Pinckard, and Dr Bardsley,—cases which would require more ingenuity than any which appears in the volume before us, to prove to be either nervous disorder, tetanus, or local inflammation. He would there also have learned a fact, which seems to be new to him, that not every bite, even of a rabid animal, is followed by hydrophobic symptoms; and that of several persons bitten by a dog certainly mad, one or two only may have the disease. This is so much a matter of common observation, that scarcely one author has failed to remark it. "It is but a small proportion, says Dr John Hunter, of such persons as are bit by dogs undoubtedly mad, who are infected with the poison." He afterwards states, that "four men and twelve dogs were bit by the same mad dog, and every one of the dogs died of the disease, while all the four men escaped, though they used no other means of prevention but such as we see every day fail." (202.) Although, therefore, neither Mr White, nor any of his patients bitten by the Irish woman's dog, should be affected with hydrophobic symptoms, this will never prove that the disease does not exist, or that it cannot be communicated to the human subject. It is singular, that any professional gentleman, pretending to reason on medical subjects, could wander so far from the right line of inquiry, or betray so little acquaintance with the admitted facts and established principles of his subject.

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* We recommend especially the following to the attention of those who wish to study the evidence on this question.—Cases given by Dr Dickson in the Medical

His ideas of the possibility of cases of hydrophobia being created out of other diseases, may be very speedily discussed; for they manifest quite as little acquaintance with the subject as his other mistakes, and, in the most lenient interpretation, must be ascribed to downright ignorance.

Observations and Inquiries, vol. iii. p. 356, (three persons and a dog all bitten by the same mastiff.) The case given by Dr Edward Johnstone from Dr Rutherford of Edinburgh, in the Memoirs of the London Medical Society. The cases of Vaughan in his Essay. The distinct case given by Dr Plummer, in the Edinburgh Medical Essays, and seen by most of the professors. The cases given by Munckley and Satterley, in the Transactions of the College of Physicians of London, vol. ii. and iv. Those given by Battie and Gray, in the Medical Commentaries of Edinburgh. (vol. iii. p. 290, and xii. p. 304.) A very good case with dissection, by Dr Marcet, in the first volume of the Medico-Chirurgical Transactions, (p. 132.) Those given by Ferriar, in his Medical Histories and Reflections. A good case by Willan in his Reports, (p. 312.) A very distinct case given by Dr Rutherford in Monro's Morbid Anatomy, and seen in the Clinical Wards of the Royal Infirmary by many competent judges. The case of the French woman, and of the young gentleman, Master Rowley, bitten by the same dog, communicated by John Hunter to Dr Hamilton. Various cases in the 3d (p. 92 and 93,) 5th (p. 85,) 6th (p. 362,) and 8th (p. 156,) volumes of the London Medical Journal. And above all, the cases of six persons recorded by Hamilton in his treatise, who were bitten by the same dog on the morning of the 22d October 1791, in the neighbourhood of Colne, Kelvedon and Coggeshall in Essex.

The idea of the symptoms being merely those of nervous disorder, so strenuously maintained by the author of this treatise, is too vague and ill-defined to be made the subject of strict scrutiny; and, as it is absurd as well as vain to try to grasp at a mere shadow, we shall say nothing of this notion till Mr White invests it with a more substantial character.

The assertion that the alleged instances of the disease are to be regarded as mere brain fever, or any other inflammatory disease, is one of those mongrel doctrines, which, partaking at once of the right and the wrong, is neither wholly true, nor entirely false, but, nevertheless, communicates a most erroneous notion of the disease, and more manifestly betrays the ignorance of the author than any other part of his publication. In hydrophobic cases the mind unquestionably wavers, the intellect is disordered, and the sensations are depraved; and after death, the brain or its membranes, or both, are found blood-shot, or otherwise diseased. But it is also to be remarked, that neither are these the whole of the morbid phenomena, nor does the degree of these symptoms, or the degree of disease in the brain and its membranes after death correspond with the violence of the characteristic phenomena of hydrophobia. In almost all the dissections of hydrophobic subjects, the lungs, and especially the tracheal and bronchial membrane have been found much diseased; and great disorder of the function of respiration has been remarked in all the reported examples. Again, no morbid appearances have been more invariably observed in hydrophobic subjects than those indicating congestion, irritation, or inflammation of the mucous membrane of the gullet and stomach, sometimes of the duodenum and ileum. Yet, it would argue little less absurdity to contend that these were instances of pneumonia or bronchitis, or of gastritis, or gastro-enteric inflammation, than it would do to say that gastritis was colic, or pneumonia was asthma. We know that the brain and its membranes, the lungs and the bronchial membrane, and the œsophageal and gastro-enteric mucous surface may be, and are, simultaneously affected in hydrophobic subjects; but the existence of affection of these several organs, by no means proves that hydrophobia consists either in inflammation of the brain, in gastritis, or in pneumonia, and would be very far from favouring the opinion, so confidently maintained by Mr White in his Reflections on the cases of Dr Pinckard and Dr Bardsley, that the one was an instance of phrenitic madness, and the other an example of œsophageal and gastric inflammation.

On the possibility of confounding hydrophobia with tetanus we have spoken in another article, and have considered, at some length, the principal marks by which they may be distinguished. It is unnecessary here to resume the question, and we must refer both Mr White in particular, if he condescends to be instructed in this manner, and our readers in general, to the observations which we have there submitted. We cannot more properly conclude these strictures, than by expressing the hope that Mr White will, before he ventures again to broach new opinions, at least take the trouble to inform himself of the old.

ART. VII.—1. *La Morfina in Pratica, &c. Hints on the Medicinal use of Morphia.* By AGOSTINO QUADRI, Doctor of Medicine and Surgery. Annali Universali di Medicina Agosto 1824.

2. *Seguito d'osservazioni, &c. Farther Observations on the use of Morphia,* by the same author. Annali, &c. Aprile 1825.

SEVERAL years have now elapsed since morphia was extracted from opium, and recommended as a substitute for it by the French chemists and physicians; but it does not appear to have gained much ground even in France, and in this country it has hitherto been almost, if not entirely, neglected.

The advantages to be expected from the substitution of the pure vegetable principles, for the crude drugs which contain them are, that the dose can be regulated with much greater accuracy, and that the active ingredient is disengaged from other substances which either lessen its activity, or render it inadmissible in certain cases in which it would otherwise be useful. Both of these advantages have been most satisfactorily proved to exist in the case of one of the vegetable alkalis, the Kina or principle of cinchona, which accordingly is rapidly becoming a favourite remedy. But it is a question with many whether the other vegetable alkalis are similarly circumstanced; and in particular, whether Morphia has any advantage over opium, or even possesses the virtues of that drug at all.

Magendie was led to believe, from one or two experiments on people with whom opium disagreed, that morphia does not cause either the disagreeable symptoms which follow the sedative action of opium in some people, or the still more unpleasant effects which take the place of its sedative action in others. In one instance, especially, he found that morphia acted as a perfect calmative, when opium had been repeatedly found to be quite inadmissible, on account of constitutional peculiarities. In mentioning his researches on a former occasion, however, we observed, that they were inconsistent with a few facts ascertained by the discoverer of morphia, Sertuerner, on himself and his pupils; for on one of his pupils it had all the unpleasant effects which opium has on some constitutions.

Since then, a short memoir has been published on the subject by M. Bally of Paris, who found that morphia causes a peculiar sort of vomiting, unattended with any other affection of the stomach, constipation, itching of the skin, and sometimes a papular eruption; and that its action on the brain is not soporific but rather stimulant. In an account given of this memoir in the Revue Médicale for February 1824, it is added, that M. Chevallier had found it to produce irritation in the throat, thirst and redness of the tongue, and likewise pains in the chest and oppression of the breathing; and that he agrees with Bally in ascribing to it rather an irritating than a sedative action on the brain, since it caused disturbed sleep, a sort of drunken delirium, and lassitude. These observations not only contradict those of Magendie, but would likewise lead to the conclusion, that, instead of being superior, morphia is rather inferior to opium, as it possesses the unpleasant effects of opium in a very great degree.

Dr Quadri, who has used the morphia a great deal oftener than any of the foregoing physicians, and who is now thoroughly convinced of its value in medical practice, has endeavoured to account for the bad success of Bally and Chevallier, and attributes it to their having always employed it in too large a dose. In support of his views, we have his assurance of his own invariable success, and the consonance of his facts with what we should expect from the poisonous properties of the alkali, and the relation it bears to opium in point of strength or activity. The repeated experiments of Orfila, Magendie, and others, have proved that the morphia, when given in large doses, causes the same deep stupor and coma that opium does; and that its activity is so much greater than that of opium, that the two French physicians must have given it in quantities at least unnecessarily large. They generally gave from half a grain to a grain.

Dr Quadri gave it in the dose of an eighth of a grain only, twice in twenty-four hours; and as the person became accustomed to it, the dose was gradually augmented to half a grain.

The cases he has published in his two memoirs are ten in number; one of inveterate restlessness and watchfulness arising from mental distress; two of hysteric convulsions; two of colic; one of pectoral complaints followed by colic; one of obstinate vomiting; one of strumous ophthalmia attended with excessive irritability of the eyes; one of irregular fever after delivery, attended with racking pains of the head and arms; and one of obstinate rheumatic headach. We shall give a short abstract of a few of these cases.

The first we shall mention is a very violent case of hysteria in a lady liable to that disease. The symptoms were risus sardonicus, succeeded by spasmodic pain at the cardiac end of the stomach, and then by general convulsions. When the fit was fully formed, she complained of severe pain over the eyes, a sense of impending suffocation, acute lancinating pains at the lower end of the gullet, vomiting of a greenish-yellow matter, or fruitless efforts to vomit, then delirium, and at last strong contraction of the abdominal muscles, and depression and retraction of the lower part of the chest. The syrup of the acetate of morphia was given in small doses every fifteen minutes. In a few hours the symptoms had nearly disappeared, and the patient got quite well in three days. Our author has omitted to mention the precise quantity administered. He adds, that the vomiting ceased with the first dose, and that the violence of the convulsions diminished progressively with each successive dose.

The next we shall notice is a case of obstinate vomiting, which had continued several months, and reduced the patient to a state of great emaciation. The chief symptoms were, constant pain of the head; aversion to the light; foul yellow tongue; bitterness of the mouth; frequent acid eructations; inextinguishable thirst; constant vomiting of every thing she took, and of viscous bilious phlegm when she abstained from food; pain in the cardiac end of the stomach; dryness, heat, and yellowness of the skin; obstinate constipation; and an exceedingly weak pulse. All kinds of remedies had been tried without any advantage. After some preparative treatment, Quadri gave a quarter of a grain of acetate of morphia in syrup, and it had the effect of lessening the pain in the stomach, as well as the vomiting, and of causing several alvine evacuations. For two days afterwards, he attempted to treat the disease with rhubarb and magnesia, but without any particular result. He then gave again a quarter of a grain of the acetate of morphia, which checked the vomiting altogether. For some days, the stomach continued so irritable that only the simplest articles of food could be given, and the slightest error in diet threatened a renewal of the vomiting. It was kept under, however, by the occasional repetition of the morphia combined with magnesia; two or three slight returns of the complaint were removed by the same means; and, at length, in four weeks from the commencement of the treatment, the patient was quite convalescent.

The third case we shall quote is one of severe colic, which was cured with great rapidity. The subject was a sculptor, twenty-six years old, and of an irritable temperament. When Dr Quadri was called to see him, the countenance had a cadaverous expression; his strength had completely failed him; the pulse was exceedingly small; the belly was swollen, very painful, and intolerably tender to the touch. An eighth part of a grain of the acetate of morphia was given every twenty minutes, till half a grain was taken. The relief was speedy and complete; he passed an excellent night; next day he had scarcely any pain in the belly; and on the following day convalescence was completely established.

The fourth and last extract we shall give is from an account of a neuralgic or rheumatic headach, which occurred in the person of an officer long liable to rheumatism in various parts of the body. The pain was exceedingly violent, and was accompanied with fever; and blood-letting, as well as internal evacuants, had been resorted to in vain. At last the acetate of morphia was tried, and half a grain given in divided doses soon put an end to the disease.

To the foregoing cases, we may add the following abstract of one which occurred lately in Paris, in the hospital practice of M. Serres, and which is of the same nature as the second quoted from Quadri's paper. It was that of a young girl, who, after a very difficult labour, fell into a state of general ill health, which at length appeared to end in a chronic peritonitis. The leading symptoms, for two months, were tenderness in the upper part of the belly, frequent vomiting, even when the stomach was empty, invariable discharge of all sorts of food and drink, and unceasing sleeplessness. After various plans of treatment had been tried unsuccessfully, and she had been reduced to a state of excessive weakness and emaciation, M. Serres at last thought he had made some impression on the disease by a diet of milk and ptisanes; but the amendment was not material. Such as it was, however, it appeared about to be lost by a relapse, when his assistant, M. Lambert (whose observations on the effect of medicines applied to the skin, when deprived of its cuticle, have lately attracted some attention in Paris,) resolved to try the effect of the acetate of morphia, applied to a part of the stomach from which a blister had been recently removed. Half a grain being applied in the state of powder, the vomiting ceased in a few minutes. This plan was frequently tried, and several times intermitted; and the effects were invariably the same. Sleep and cessation of vomiting were caused by the application of the morphia; and sleeplessness and vomiting returned when it was omitted. She was then put under regular treatment with the morphia, and the vomiting gradually abated, and at length disappeared. This seems to have been a case, not of peritonitis, as Serres at first thought, but of obstinate vomiting, produced by some nervous derangement.[*] To cases of this nature, which are often obstinate, and which we have seen prove eventually fatal, we conceive the acetate of morphia, on account of its small bulk, is particularly adapted.

We cannot conclude, without also adding one or two remarks from the testimony of Professor Brera of Padua in favour of this remedy. At the Clinical Institution of that city, most of the new remedies have been lately subjected to experiments, of which the professor is about to publish the results. Meanwhile, an abstract of some of them made with the acetate of morphia has been just published in the Italian Annals of Medicine; from which abstract it appears, that Brera never witnessed any of the disagreeable effects observed by Bally. He commences with an eighth of a grain for a dose; and in one case, in which it was continued for a month, the dose was gradually increased to six grains. In a very few instances it caused vomiting; and if spirituous liquors or other diffusible stimulants were taken while the system was under its action, it likewise caused obstinate headach. When given with proper precautions, however, its invariable effects were a feeling of weight in the head, slight giddiness, debility, then deep somnolency, often continuing above a day, also turbid urine, and invariably constipation.[†]

These examples and observations are enough to show that morphia possesses the sedative effects of opium when given in small doses; and, consequently, we must infer, that those who have found it to possess other properties have either used a salt of bad quality, or have given it in improper doses, or in improper circumstances. They do not bear upon the question, whether morphia, like opium, produces unpleasant symptoms in peculiar constitutions. But they prove that it is an effectual and safe remedy, which many practitioners, looking to its energy as a poison, are inclined to doubt. We hope, therefore, that as it is now easily procured, it will soon be subjected to a fair trial in this country.

ART. VIII.—*Researches into the Nature and Treatment of Dropsy in the Brain, Chest, Abdomen, Ovarium, and Skin; in which a more correct and consistent Pathology of these Diseases is attempted to be established, and a new and more successful method of treating them recommended and explained.* By JOSEPH AYRE, M. D. Member of the College of Physicians, &c. 8vo. London, 1825, pp. 242.

IN our observations on the pathological theories of Dr Parry, in last number, we had occasion to speak of the advantages which have resulted from the views, which that physician was almost the first to take of the pathology of dropsical diseases. It is probable, that the cold and suspicious reception which these opinions have met from many practitioners, arose partly from their diametrical opposition to the first principles of the Cullenian doctrines, partly from deficient illustration, and in some respect also, because they were attempted to be carried too far, and applied in too general and extensive a sense. As experience is multiplied, however, and research is extended, new proofs of the correctness and soundness of these doctrines are accumulated; and the pathological inquirer begins to discern more clearly, where inflammation is a cause of dropsical effusion, and where this morbid secretion may take place independent of such a process.

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[*] Archives Gen. de Med. Mars 1826. [†] Annali Univ. di Med. Ottobre 1825.

The present work may be recommended for exhibiting a succinct but tolerably clear statement of the principal facts and arguments, which tend to demonstrate the inflammatory nature and origin of dropsy, and for applying this doctrine with considerable accuracy, to give a general and consistent view of the best established opinions on the pathology and treatment of the different dropsical diseases. To the merit of originality it does not aspire; for that was out of the question after the writings of Parry, of Rush, of Wells, and of Blackall. But the author has the merit, at least, of concentrating the results of the researches and reasonings of these authors, and of adding to the force of the evidence thus embodied, new proofs derived from his own observation and experience.

The work consists of four chapters, in the first of which the author treats of the general pathology of dropsy; in the second, he delineates the characters by which the individual dropsical effusions are distinguished; in the third, he delivers the principles by which the treatment is to be regulated; and the fourth contains cases and dissections to illustrate and enforce the doctrines explained in the preceding three.

In the first chapter, Dr Ayre first shows the inaccuracy of the old doctrine of deficient power in the absorbents, laxity of the exhalants, and impeded return of the venous blood, and its insufficiency to explain all the phenomena of dropsy. The watery or serous effusion, he remarks, which, in different parts of the human body, constitutes the various forms of dropsy, is a mere effect of a certain morbid condition of the solids; that is, of the textures in which the dropsical effusion takes place, and of their blood-vessels. That the power of the absorbents is not impaired, is to be inferred from the fact, that the process of absorption goes on as perfectly as in the state of health. Thus in dropsical subjects, fat, muscle and even bone are absorbed, not only with equal facility, but even to a greater extent than in people in health. Mercury if rubbed on the skin, or taken internally, is also absorbed in dropsical persons. The blood of ecchymosed or livid spots is removed during the presence of dropsical symptoms; and while the whole person is distended with fluid, absorption appears to go on within the joints, and in the synovial sheaths, with the same regularity as before, which could not be supposed to take place if the absorbent system was in a state of general debility and atony.

The hypothesis of the dropsical effusion depending on want of tone or laxity of the exhalant vessels, is not less objectionable. It implies one of two conditions in the opinion of Dr Ayre; first, that the dropsical fluid is mechanically separated from them, and nevertheless is identical in sensible and chemical qualities with another fluid, which is admitted to be secreted; or, secondly, that, if the dropsical fluid be secreted, then an increased secretion is the effect of diminished power,—a conclusion at once absurd and impossible.

Mechanical obstruction to the return of the blood by the veins is, according to Dr Ayre, equally inadequate to explain the formation of dropsy. The proof derived from the example of the scirrhous or tuberculated liver, which is so frequently quoted as an instance of the influence of this cause, is, in his opinion, neither conclusive nor satisfactory. The liver and spleen both may be tuberculated and hardened without giving rise to abdominal dropsy. When this effusion has taken place under such circumstances, it has been carried off by the natural passages, or by tapping, permanently, yet without any visible change in the structure of the liver; and many instances of dropsy of the belly take place without tubercular disease of the liver, or any other cause of visceral obstruction and impeded venous circulation. Farther, it is rarely possible to trace either hydrocele in men, or ovarian dropsy in women, to any cause or sort of obstructed circulation.

The experiment which Lower performed in tying the *vena cava* of a dog, which has been so often quoted to demonstrate the effect of obstruction in producing serous effusion, has been misunderstood. The serous fluid, which followed the operation, was the effect of inflammation resulting from the mechanical injury necessarily inflicted on the peritoneum. Another proof, which shows how little venous obstruction can effect in causing this effusion, is found in cases where the *vena cava* has been found obstructed in the human subject, without being followed by dropsical effusion. Dr Ayre refers to the case recorded by Mr Wilson in the third volume of the Medico-Chirurgical Transactions. He might have added the case described by the late Dr Baillie in the first volume of the Medical and Chirurgical Transactions, in his Observations on the Obliteration of Vessels. In like manner, he argues that several morbid conditions of the heart may take place, and seriously obstruct the course of the circulation, yet without giving rise to effusion of serous fluid.

From these facts, therefore, and others noticed in the course of subsequent discussion of the subject, Dr Ayre infers that dropsical effusions depend neither on want of tone in the exhalant or absorbent system, nor on mechanical obstruction of the liver or any other viscus; and proceeds to show that it arises from a morbid action in the cellular and serous tissues, allied in its nature to inflammation. He is not quite so successful in investigating this part of the question; and his arguments are perhaps less pointed and forcible than they might have been, chiefly by mistaking the object to be demonstrated, and by attempting more than the nature of the question truly admits.

The analogy which he points out between dropsical fluid, and the fluid discharged by the outer surface of the corion in erysipelas, in burns, during the irritation of a blister, or in the disease termed *pemphigus*, is certainly correct, and proves the effect of inflammation in producing the secretion of serous fluid. Nor is it entirely irrelevant to obviate the natural objection which the spirit of opposition might urge against this theory, to say that the absence of pain in certain tissues, does not positively show the absence of the inflammatory process;—and that, if there are examples of inordinate secretion in the living body, quite independent of inflammation, they are not analogous to those of the serous effusion which takes place from the diaphanous membranes. Such observations are no doubt proper; but they do not form conclusive arguments; and an antagonist not very scrupulous might justly contend that they did not bear directly on the point at issue. Though they show that there may be an analogy between inflammation and dropsy, they do not prove the existence of that analogy, much less that of identity.

Now, the whole of the difficulty consists, in our apprehension, in misstating the question, which is neither whether inflammation is dropsy, or dropsy inflammation, nor whether the organic products of both be the same; but, whether that state of the blood-vessels to which we give the name of inflammation, ever terminates in dropsical effusion, and whether the secretion, which constitutes dropsical effusion, is ever an effect of the process of inflammation? The proper way to determine this question in the negative or the affirmative, is, in the first place, to trace the progress and effects of inflammation of the serous membranes, and of the cellular tissue on the one hand, and on the other the history and origin of dropsical effusions; and, in the second place, to trace the mutual connection, if it exists, between the cause and the effect, by morbid anatomy, and from this source supply what is defective, or illustrate what is obscure, in the chain of evidence obtained by mere observation.

The term inflammation is conditional,—a complex idea, necessarily including several simple ones, from the presence or absence of which we infer the existence or absence of the inflammatory process. Now, if it can be distinctly shown that the process to which we agree to give this name, when taking place in the serous membranes, ever terminates in the formation of that serous fluid which gives rise to the appearances and symptoms of dropsy, we have then one direct proof of the truth of the theory which ascribes this disease to the presence of inflammation. *Secondly*, if we can prove that a dropsical effusion in the arachnoid membrane, the pleura, or peritoneum was preceded by symptoms of inflammatory action in those membranes, another proof is obtained of the verisimilitude of the theory. There would still, however, be a breach in the train of reasoning, unless we could inspect the parts in which the disease resides, and trace the gradual but sure transition from vascular distension, irritation, or inflammation, to serous secretion or dropsical effusion; and it is only when this is effected that we can be said to have obtained the most conclusive and satisfactory evidence of the soundness of the theory.

Now there is little doubt, that even the last species of proof may be obtained, and is often obtained in the course of morbid dissections. We have had occasion to see it more than once, in the pleura especially, which we have found, in great collections of serous fluid, to be not only highly vascular, but to have lost its natural transparency, and to be covered with thin shreds and patches of coagulable lymph. It is certainly true, that this is not observed in every case of dropsy, with effusion into the chest; for, as we shall subsequently notice, water is often separated from the pleura, without manifest proofs of inflammation existing in the membrane. It is only in the acute dropsy which attacks plethoric subjects, not unfrequently in the meridian of life, and, in other respects, apparently vigorous. It must further be observed, that the interval which, in many cases, elapses between the existence of the inflammatory process and the period of the fatal event, is sometimes so great, that it is difficult to recognise some of the marks of previous inflammation. But the effusion of some degree of lymph is almost invariably to be seen, either adhering to the affected membrane, or floating in the fluid secretion; and this must always be admitted as an unequivocal proof of the blood-vessels having been in that state which constitutes inflammation.

We have said above, that the term inflammation is a conditional one. We have now to remark, that one of its conditions may safely and justly be admitted to be, that it causes, when seated in a serous membrane, the formation of an unusual quantity, and, perhaps, an altered quality of the ordinary fluid, which, in the state of health, is alternately and incessantly secreted and absorbed. Thus, let the arachnoid membrane be inflamed;—its minute capillaries speedily pour out a quantity of limpid colourless fluid, which, in its outer surface, gives it the aspect of a jelly, but, within, in the choroid plexus, fills the cerebral cavities with water. Let the pleura become the seat of a similar process;—and serous fluid, yellow, greenish, or red, is quickly secreted by the vessels of its free surface. And, in the same manner, the inflamed peritoneum becomes the source of a similar morbid secretion.

It is not uninteresting to remark, how well the nature of these actions was understood by Cruickshank long ago, and, more recently, by Baillie and Pemberton. "The second species of dropsy," says the former author in his Anatomy of the Absorbing Vessels, "is very common, and is that which arises in consequence of previous inflammation of a cavity;" (the cavity formed by a serous membrane is here understood,) "and may take place in any habit of body. If an inflammation arise in a cavity, it may terminate in a number of different ways; one of these ways is by an increased secretion of fluid of surfaces. A man receives a blow on the testicle; inflammation takes place, and the consequence is frequently a hydrocele or dropsy of the *tunica vaginalis*. A child's brain inflames, and this inflammation ends at last in hydrocephalus, or collection of water in the brain. Pleurisy frequently terminates in *hydrothorax*, or collection of water in the chest. I have often taken away forty or sixty pints of water, which had accumulated in the cavity of the abdomen, in the few days the peritoneal inflammation had lasted, during the usual species of child-bed fever. This is to be considered as the substituting a less dangerous disease for another. Peritoneal inflammation kills often in three days; but ascites may last twenty years." Our readers will find, that the experience of Baillie led him to admit the accuracy of these views, in regard to water of the chest,* which, he observed, was sometimes accompanied with adhesions; and that Pemberton coincided in the same opinion, with regard to the formation of abdominal dropsy, which he considered as a sort of natural cure of peritoneal inflammation.†

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* Morbid Anatomy, p. 57. 4th edit. London, 1812.

† Abdominal Viscera, p. 12. "Sometimes a resolution of the inflammation takes place from the throwing out of a fluid, when ascites is produced."

But a more serious objection in our mind to the theory, is entirely overlooked by Dr Ayre, and perhaps by most authors who have bestowed any reflection on the subject. Suppose we admit the sufficiency of the arguments above adduced to establish the doctrine, and say that dropsy may be an effect of inflammation, it remains to be inquired wherein does the inflammation which produces dropsy differ from that which does not produce it.

There can be no doubt that many inflammations do not terminate in dropsy, in whatever mode they are treated, and that certain dropsical effusions originate without being preceded by inflammation; and a very natural question is suggested, to determine the line of distinction between those which do, and those which do not. Now we apprehend that it is utterly impossible to effect this desirable object, without looking closely to the morbid process as disclosed by dissection in each class of cases.

A serous membrane, such as the pleura, pericardium, or peritoneum, when acutely inflamed, secretes a new product of an albuminous nature, which is no sooner deposited on the membrane, than it undergoes spontaneous coagulation, or separation into a solid and fluid part. The former, which was from this circumstance named coagulable lymph by Hunter, who erroneously believed it to be secreted in its solid form, becomes, as is well known, penetrated with blood-vessels, and constitutes the uniting medium of contiguous and opposite membranes. The fluid part, if in small quantity, is almost as rapidly removed as it is separated from the lymph, or it is taken up by absorption; and this constitutes the natural cure in acute inflammations of serous membranes, such as the pleura or peritoneum.

When in greater quantity, however, it is not so speedily removed, but, remaining in the cavity of the membrane, constitutes the beginning of a dropsical collection. This excessive quantity, however, in relation to the absorbing power of the membrane, occurs only in two cases; first, when the inflammation of the membrane is originally diffuse, or occupies a large space of its surface; or, secondly, when the inflammation, after being confined to a limited spot, becomes diffuse and extensive. A serous membrane, when acutely inflamed, rarely secretes lymph over its whole surface; but it shows a marked tendency to effuse it in limited spots and definite patches. It is true that this character is to be regarded as one extreme of the action, as that which secretes fluid with little coagulable matter is another; and there are innumerable gradations and shadows of gradations between them. The result of many dissections of diseased states of the chest and belly, may be said to lead to this general conclusion,—that the greater tendency the inflammation shows to limit itself, the greater portion of coagulable matter or lymph, which becomes organizable, does the morbid product contain; and the more prone the inflammatory action is to spread, the more fluid and copious is the morbid secretion, and the less abundant is the coagulable or organizable matter.

It follows, therefore, from these considerations, that the process which terminates in dropsical effusion differs from that which terminates in the effusion of lymph and the formation of adhesions, in being more diffusive, and perhaps superficial. It may be regarded as a sort of *disjunctive* inflammation, in contradistinction to the other, which has been termed the adhesive inflammation. Nor would it be a valid objection to argue that the suppurative inflammation, which is often found to take place in the same membranes, is not thereby distinguished from the dropsical. The suppurative inflammation taking place in serous membranes is doubtless a disjunctive process, as has been clearly demonstrated by the observations of Hunter, especially on his case of peritoneal inflammation at p. 461, (4to edit.) and has been repeatedly verified since his time; but it differs entirely from the dropsical inflammation, in requiring a much more elaborate action of the vessels,—a higher degree, as it may be termed, of the inflammatory process, and in thereby being often attended with some destruction either of the membrane or of its coagulable lymph. This higher, or more elaborate form of action is alluded to by Dr Ayre in some of his observations on the present subject, which our readers will undoubtedly peruse with interest.

One circumstance, however, in these pathological principles merits further notice. They do not apply with equal facility or the same accuracy to inflammation of the arachnoid membrane, as they do to that of the pleura and peritoneum. For this we believe no other reason can be assigned, than that the former membrane, by peculiarity of structure and extreme delicacy of organization, is less liable to assume either the adhesive or the suppurative process, than those of the chest and belly. That it does on certain rare occasions assume both of these processes, the result of not a few dissections unequivocally shows. One of the best examples which we have witnessed, occurred in the brain of a child, in which there was a large collection of serous fluid, forming a tumour at the base of the frontal bone. When this was evacuated by puncture, inflammation came on in a few hours; and after death, a copious exudation of lymph was found lining the surface of what formed the ventricles, and covering also the arachnoid surface of the choroid plexus. But the arachnoid is manifestly averse to the action both of the lymphy and of the suppurative inflammation. The most ordinary and most genuine product which it forms in this morbid condition is a pure limpid water, with scarcely a perceptible trace of albuminous matter, and almost never so much as to undergo any degree of spontaneous coagulation.

It appears, therefore, to be a just conclusion, that many examples of dropsical effusion depend on a state of the vascular system analogous to inflammation, in showing greater fulness and distension than in the state of health, and a decided tendency to the secretion of morbid products; but differing in this respect, that these products contain an infinitely smaller proportion of albuminous, and a much larger quantity of watery matter. But beyond this, we doubt whether it is possible to advance, consistently at least with the known facts and phenomena of dropsical diseases. And in this particular, we presume a line of distinction ought to have been drawn in the work before us. It must be admitted that Dr Ayre has made, in the chapter now under consideration, an ingenious application of undoubted facts; nor do we deny that he draws from them conclusions which, to a certain extent, are perfectly legitimate. We are inclined to believe, however, that he carries them somewhat too far; that he errs in ascribing all instances of dropsy invariably to inflammatory action; and that he states the little influence of obstructed circulation in terms rather unqualified and exclusive.

We have already seen, that the author of the present work denies the effect of scirrhous liver, or other visceral disease in inducing dropsy, by obstructing the return of the venous blood. Now, it is our opinion that two mistakes are committed in this place, by looseness of thinking, and an inaccurate mode of expression. In the first place, the species of disorganization, which has been supposed by most authors to produce dropsical effusion, is not scirrhus, but either that induration which is the result of inflammation, acute or chronic, or tubercular growth in the substance of the organ, or affecting its membranous covering. In the second place, it is not simply an impeded return to the venous blood, or mere mechanical hindrance or obstruction, which is accused of producing dropsy, but a peculiar fulness and distension of the capillary system, both arteries and veins; and this is an almost invariable consequence of these chronic inflammations, attended with induration, and not an uncommon consequence of tubercular growths. We do not deny that our author may be right in many instances, in ascribing the dropsical effusion which is known to succeed these morbid processes, to extension of the chronic action from the substance to the membranes of the affected organs; but various facts prevent us from admitting that this explanation will account for the whole.

The following facts may be adduced in support of what we here assert.

In tumours, tubercles, and other new growths affecting the brain, a common consequence is serous effusion between the arachnoid and *pia mater*, and in the ventricles; marks of congestion are found in the vicinity of the foreign growth; but the membranes are comparatively free from disease.

In tubercles affecting the substance of the lungs, though the pleura is healthy, with the exception of a few adhesions, more or less serous fluid is invariably found in its cavity. In the case of tumours in the lungs, such as *fungus hematodes*, *melanosis*, and other new growths, serous fluid is always effused into the cavity of the pleura, and the patient dies hydrothoracic. We have seen an instance of a man who laboured under an anomalous tumour of the left lung, which projected during life above the clavicle. After death, which was preceded by urgent symtoms of hydrothorax, much fluid was found in the cavity of the pleura, which presented no marks of recent inflammation. In dilatation of the heart, contraction of its orifices, and induration of its valves, and in aneurism of the aorta, or innominata, though no inflammation spreads to the pleura, the cavity of that membrane is also filled with serous fluid. This effusion can be ascribed only to the mechanical difficulty which the blood experiences in passing from the pulmonary veins into the aorta, and, consequently, to the difficulty it encounters in circulating through the pulmonary arteries, which thus become inordinately distended with blood, and rouse their exhalants to increased secretion. In the abdomen, it is certainly more difficult to trace the independence of dropsy on the process of inflammation. But those who are familiar with morbid dissections will not fail to know, that it is common to find *ascites* associated with a small clay-coloured liver, an evident proof of previous disease and obstruction, and yet the peritoneum comparatively unaffected.

Lastly, there are various instances of dropsical infiltration of the extremities, entirely unconnected with inflammation. It is sufficient to mention two. In scirrhous or cancerous destruction of the female breast, when the axillary glands become enlarged, the whole arm from the shoulder to the tips of the fingers becomes œdematous. In lumbar abscess, one of the earliest symptoms is œdematous swelling of the limb of the side on which the collection of matter is situate, and this continues until the abscess travels downwards, and, by appearing at the surface, ceases to compress the vessels of the limb. It is the same with other deep-seated collections of matter, which often cause local œdema long before they furnish any other symptom of their existence.

These facts, to which many more might be added, if time and space permitted, leave in our minds no doubt of the operation of obstruction of the circulation, both arterial and venous, in inducing dropsical effusion.

It is of no sort of moment to inquire whether it is obstruction to the return of the blood through the veins or not; or if it turned out, on inquiry, that this was not the sort of obstruction. It is impossible for any one who knows the laws of the circulation, to conceive an obstruction in veins unaccompanied by a similar impediment in the contiguous arteries; and when it takes place in the capillary system, as it is impossible to distinguish the terminations of arteries from the origins of veins, so obstruction which affects one set of vessels, necessarily affects both. It is sufficient that the capillaries are so much distended beyond their ordinary capacity, that their exhalant branches shall pour out serous fluid, by means of an action short of inflammation. It is to this head that we are to refer all the symptomatic dropsies which take place in organic diseases; all the dropsical effusions which take place in the last stage of many fatal disorders; and, in short, all those which are ascribed to debility, and are observed to occur under circumstances of great weakness and impaired power. Though the term dropsy must be understood as almost always applicable more justly to a symptom or effect of diseased action, than to the diseased action itself, yet this species is much more properly entitled to the epithet of *symptomatic dropsy* than the former.

We cannot conclude these observations on the pathology of dropsy, without the following remark. It appears, that, pathologically speaking, there are two forms of dropsical effusion, one primary, idiopathic, and more or less acute, depending on the state of the capillaries of the membranes solely; the other secondary, symptomatic, and invariably chronic, depending on the circulation of certain organs connected with the membranes indirectly only. The former sort of dropsies are *active* in the language of the elder pathologists; the latter passive; and it is not without interest to remark, that, as some of the physicians of the last century, more especially Stahl and his disciples, traced an analogy between hemorrhagies and dropsical discharges, so, in this respect, that analogy is not violated. As there is a family of hemorrhagies depending on capillary fulness and distension, with other marks of inflammation, and another on mechanical derangement and obstruction of the circulation, so there is a double family of dropsical effusions proceeding from the same respective sources.

We have dwelt so fully, and at such length on the subject of the first chapter of Dr Ayre's work, that we cannot bestow an equal proportion of attention on the other three. It so happens, that, in consequence of what we have above said, this is in a great measure unnecessary, so far as the subsequent chapter on the individual dropsical diseases is concerned. The same views nearly are given, and the same principles are unfolded; only they are applied in a more particular manner to explain the formation of each dropsical affection. The results are given briefly, in a very distinct recapitulation, of which the reader may feel some interest in perusing the following extracts. We merely premise, that, with the exceptions already stated, we agree entirely with the soundness of the principles laid down in this recapitulation, and recommend them to the serious reflection of our readers.

"I. When the discharge takes place into the brain, it may occur, either as an incidental effect of that acute inflammation of the organ, which answers to the phrenitis of nosologists, and of which the proper morbid result is coagulable lymph; or under its ordinary and proper form of serous inflammation, when, relatively to phrenitis, it will be in a sub-acute or chronic state, with the watery effusion as its natural product. It may be either idiopathic or symptomatic. When the former, it may be induced by a general state of the system, answering in its nature to the scrophulous diathesis, and favouring the developement of a local disease; and this state may be either that of direct excitement, or of a general constitutional irritation of a specific kind, derived from the suppression or obstruction of some required evacuation, and most commonly occasioning, particularly in the latter case, a precursory turgescence of the brain. When the disease is symptomatic, it may arise from some structural disease within the head; or, secondly, from some relative weakness of its venous system; or, thirdly, from a distant irritation in the digestive organs. When the attack of the disease proceeds from the first of these causes, it is usually severe, and answers in its symptoms to the water stroke of the German writers. When, from the second, the disease corresponds to the serous apoplexy of systematic writers; and, as it respects its approach, is usually chronic, though generally sudden in its termination, by the arterial re-action being rapidly, sometimes instantly, succeeded by the effusion. When it proceeds from the third cause, the turgescent state of the brain, which gives origin to symptoms that simulate those of the true disease, arises as a direct effect of chylopoetic disturbance, and is remediable, until arterial re-action commences, by means directed solely to its remote cause.

"II. Hydrothorax may be either idiopathic or symptomatic, and proceed from a local or general cause. When idiopathic, it may either arise from all the local or general causes of inflammation, and in this form exists independently of, or in combination with some higher grade of local vascular excitement; or it may arise from a local congestive state of the vascular system within the chest, as an effect of a plethora of the general circulation; and in these several cases the effusion may prove more or less remedial of the local, and, sometimes, of the general excitement. When symptomatic, it usually occurs under a chronic form, and from the chronic inflammatory action of the visceral disease extending to the serous membranes of the chest. The occurrence of the dropsical effusion, when thus symptomatic, affords no standard by which to judge of the measure of danger belonging to the visceral disease, independently of this its effect; whilst the effusion, when in considerable quantity, is essentially destructive of life, by interfering with functions that are necessary to it.

"III. Abdominal dropsy proceeds nearly from the same causes as hydrothorax, and like it, is most commonly symptomatic of some diseased viscus, by the chronic inflammation in the internal tissues of the diseased organ being propagated to its outer peritoneal covering, and thence through the cavity of the abdomen. The effusion is of inconsiderable importance compared with the visceral disease, which is its remote cause; until, from the risk incurred of farther disease from the stimulus of distension, a necessity arises for tapping, when this operation proves a further cause, perhaps, of aggravating the disease of the affected viscus, and either of renewing or extending the hydropic excitement, or of converting it into a high or more destructive form of inflammation.

"IV. Ovarian dropsy originates, in every instance, either from a chronic inflammation commencing in the inner surface of the serous membrane investing the ovary; or from a similar morbid state of the ovary itself, or of its insterstitial tissue, and which, after continuing an indefinite period, extends, at length, to its serous envelope. The effusion which ensues upon the excitement, is often corrective of it, until fresh causes be applied, that aggravate or renew the disease of the ovarium, or of investing membrane. The inflammation thus renewed, may, according to the form it assumes, either prove a cause of a fresh accumulation, or it may become the means of a radical cure, by the effusion of coagulable lymph which it induces; or, lastly, it may, by occasioning suppuration, be destructive of life.

"V. Anasarca is a disease, the importance of which is alone determinable by the nature of its remote cause, and which will vary, in this respect, according as it is dependent, or not, on some visceral or other disease; or, as it is connected or not with some cachectical state of the system; and whether as a *cause* or an *effect* of it. In its idiopathic and simple form, the effusion of its fluid puts an end to the serous inflammation producing it, and, when occurring alone, is frequently vicarious of a similar effusion, which, under a slight variation of circumstances, might have been discharged into some cavity. As a purely local affection, it may derive its origin from the ordinary causes of inflammation acting either locally or generally; or it may be secondary to some serous inflammation seated in a cavity; or, lastly, it may arise from some disturbance in the digestive function, by which this and other distant irritations are produced, through the operation of that obscure law of the animal economy, denominated sympathy."

Of the third chapter, on the treatment of dropsical effusions, we have little to say. The general practical measures are fairly enough deduced from the pathological principles delivered in the previous part of the work. The author has, perhaps, a shade too much of confidence in the scholastic practice of searching for curative indications, the reasons of which cannot, in all cases, be reconciled with good pathology, and the application of which would lead either to bad or inconsistent practice. Thus, when Dr Ayre recommends, in his first indication, "to remove the visceral, or such other disease or state, whether local or general, which proves a remote cause of the effusion,"—we know that he proposes what, in nineteen of twenty cases, is absolutely impossible, and, so far as the actual and beneficial treatment is concerned, is a mere dead letter. The knowledge of the remote causes of diseases is by no means invariably necessary to their cure; and in dropsical diseases it is almost entirely unavailing. If the dropsy be present, the object is to remove it; and if it is removable, it will be so by the means which the practitioner employs, without adverting to the nature of the remote cause or causes. In short, the remedies which will cure a dropsy without visceral disorganization must be employed in every given case; and where disorganization is present, the practitioner can do no more.

His second and third indications are inconsistent; at least one of the two is superfluous. Whatever operates on the proximate cause of a disease, will operate also on its effects. Whatever removes the morbidly increased action which causes the serous effusion, necessarily removes this effusion; and, as we know no other means of promoting absorption than those which remove the morbid action, it is at once hypothetical and superfluous to annex this precept as an indication to the former.

The observations on the treatment of dropsy of the brain are long, and perhaps not free from tediousness. This we are inclined to ascribe to the various and sometimes opposite practices, which have been said to be successful in the cure of this disease. Much of the confusion and discrepancy prevalent in the treatment of water in the head, doubtless arose from the erroneous notions entertained of its nature. Now that these are exploded, our measures ought no longer to be manifold in number, confused in application, and opposite in effect, but few, efficient, and direct in their operation. A reform of this description, which has been much wanted, would have formed a valuable part of such a publication as that before us; and as the materials are ample, and on the whole satisfactory, a nearer approach to it than we see in the present work must have rendered an important service to the practitioner, who has at present to consult half a-score or a dozen of authors, before he can make up his mind on the merits of any single remedy or mode of treatment.

The observations on the use of blood-letting are, on the whole, judicious. But he is too warm in his commendations of calomel and mercurial preparations; and we beg to recommend to his special attention, the remarks which Golis has offered on the effects of this mineral in his experience, where it is said to have induced fatal *enteritis* in not a few infants who were treated with it for symptoms of hydrocephalus.*

In the remarks on the treatment of hydrothorax, and ascites, if it is possible to discover any error or weakness, it is in a fear of general blood-letting, and even of local bleeding by leeches, which occasionally betrays itself. Thus, at p. 143, when the author talks of five or six ounces of blood to be drawn by cupping or leeching from the integuments, we cannot imagine a case of hydrothorax, which could be benefited by such a remedy. If a discharge of blood is to be beneficial at all, it would require to be done, at least, to four times the amount, in order to produce any sensible impression on the disease. When it is to be done in such small quantity, as five or six ounces, it may be safely laid down as a general rule, that it need not be employed at all.

We are happy to see, however, that the author exposes the vulgar empiricism of charging the system with mercury, in all cases where the practitioner finds other remedies unavailing, and knows not what to do; and we recommend his observations, which are similar to those by Dr Blackall, to the consideration of the advocates for indiscriminate mercurialism. He likewise very properly reprobates the general use of that great nostrum in the treatment of dropsy, gin-punch. His observations on diuretics are good, but neither new nor unknown. After all, the best diuretics, in most cases of dropsy, will be found to be blood-letting, with the liberal use of cool diluent watery liquors, aided by due management of the diet, clothing, and other non-naturals.

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* "Many times," says Golis, "I saw under those large and long continued doses of calomel, the hydrocephalic symptoms suddenly vanish, and inflammation of the intestines arise and terminate in death. Still oftener I observed this accident from an incautious use of calomel in croup, viz. where all the frightful symptoms of the tracheal inflammation, which threatened suffocation, suddenly vanish, and *enteritis* appear, pass rapidly into gangrene, and destroy the patients."—A Treatise on the Hydrocephalus Acutus, by Leopold Antony Golis, p. 113.

PART III.

MEDICAL INTELLIGENCE.

New Regulations for obtaining Medical Degrees, enacted by the Universities of Aberdeen and St Andrews.

Sir,—The author of "a letter," in your last number, "explaining the object of the Society of Physicians of the United Kingdom," in pointing out what he terms "a mistake of the reviewer in No. 85," has committed an error much more serious in its consequences, to correct which will be but justice to the learned bodies implicated.

From the paragraphs numbered "4th and 5th," p. 325, it is to be inferred that all the Scotch Universities, except Edinburgh and Glasgow, are in the habit of granting Medical Degrees without examination. That this is an inaccurate representation, and that there are colleges equally cautious with those mentioned, will be evident from a perusal of the subjoined regulations which, for eighteen months, have been acted upon by the two Universities at Aberdeen.

"*Marischal College and University, Aberdeen.—Regulations respecting Medical Degrees.*

"1. Every Person offering himself as a Candidate for the degree of M. D. shall, 1st, Produce satisfactory evidence of his possessing a good character, and of his having attained the age of twenty-five years; and, 2dly, Shall lay before the Senatus Academicus, certificates of his having obtained the degree of A. M. in this or some other University, after the usual examinations; * of his having attended courses of lectures on Anatomy, Surgery, Chemistry, Materia Medica, Theory and Practice of Physic, and Botany, in this or some other University, or celebrated School, under Professors or Teachers of reputation; and of his having attended, for three or more years, a Medical Hospital containing the average number of at least eighty patients.

"2. After the Senatus Academicus shall have been fully satisfied on the above preliminary points, the applicant shall be received as a candidate for the degree of M. D.; and shall be required to appear before the University, at one of their stated terms for granting such degrees, and in their presence be examined, by the Medical and other Professors, on the different branches of Medical Science—on his knowledge of the Greek and Latin Languages—and on such other branches of literature as they shall see proper. If fully satisfied with the qualifications of the candidate, the University shall confer on him the degree which he solicits.

"By order of the Senatus Academicus,
"John Cruickshank, *Secretary*."

These are the only conditions upon which the degree of M. D. can now be obtained at Aberdeen; and it is presumed that henceforth the graduates of the universities there may claim the same rank as those of Edinburgh and Glasgow. The author of the "letter," &c. will at least acknowledge them equal to those of Glasgow; the regulations of their respective universities being *nearly* the same; what difference there is between them, is decidedly in favour of Aberdeen, as on looking over the Glasgow regulations I see no provision for testing the candidate's general acquirements.

Staffordshire, 21*st May* 1826. Vindex.

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* As this requisition, respecting the degree of A. M. might prove injurious to some Medical Students whose education is now in progress, were it to take effect immediately, it is resolved that it shall not come into full force till the year 1830.

" *Regulations respecting Medical Degrees, appointed by the Senatus Academicus of the University of St Andrews to be observed in all time coming.*

" 1st.—No degree shall be conferred on an absent candidate.

" 2d.—The candidate must produce a satisfactory certificate that he is upwards of twenty-one years of age, and that he is of unexceptionable moral character.

" 3d.—The candidate, if he be not in possession of a diploma as A. M., must produce certificates of his having had a Liberal and Classical Education, and be ready to undergo an examination as to his proficiency in Classical Literature by a committee of the University, or by the Senatus Academicus.

" 4th.—The candidate must produce certificates that he has attended in some University, or celebrated school of Medicine, for at least four complete sessions, during four years, the following branches of Medical Education, viz. Anatomy and Surgery; Practical Anatomy, or private Dissections; Materia Medica and Pharmacy; Chemistry and Chemical Pharmacy; the Theory of Physic; the Practice of Physic; Midwifery and the diseases of Women and Children; Botany, and Clinical Lectures delivered by Professors, or accredited Medical Officers, on the cases of the sick in a large public Hospital. (It is not meant that the candidate shall have attended more than two or three of the above-mentioned Medical Classes during one session.)

" 5th.—The candidate must bring certificates of his having attended the daily visitations of the Physicians and Surgeons of such Hospital for at least six months a-year during two different years.

" 6th.—If the candidate shall have so far satisfied the University, the rector shall be requested to fix a day for his examination by the Medical and other Professors on all the branches of medical science; and provided this examination shall satisfy the Senatus Academicus, the candidate shall have delivered to him a Medical case or cases with questions subjoined, which questions he must answer in writing, and defend his answers before the Members of the University.

" 7th.—The whole proceedings shall then be submitted to the consideration of the Senatus Academicus, and if they are satisfied, the degree of M. D. shall be conferred on the candidate by the rector in the hall of the public library.

" Such are the regulations appointed by the university of St Andrews to be observed in all ordinary cases. When, however, the candidate, possessed of a Surgical Diploma from Edinburgh, London, Dublin, or Glasgow, shall have been in regular practice for some years, or when he shall have been appointed and have acted as surgeon in his Majesty's navy or army, or to the forces or ships of the East India Company, a three years' attendance on the above-mentioned courses of medicine, and one year's attendance on a public hospital, shall be deemed sufficient to rank him as entitled to be examined.

" Farther, it is desirable that all candidates communicate by letter with the Medical Professor, and send him a list of the certificates he means to produce before he repairs to St Andrews for examination. This may prevent disappointment, delay, and expence to the candidate.

" 8th.—The university reserves to itself the power to confer honorary degrees in Medicine on highly distinguished individuals, who cannot be expected to comply with the above regulations; but every such honorary degree shall be conferred unsolicited and free of expence.

" *St Andrews, 25th February* 1826."

American Medical Schools.[*]—There are fourteen medical schools in the United States, viz. seven in New England, three in the Middle, two in the Southern, and two in the Western States. Their names and the number of pupils frequenting them are as follows:—

Medical School of Maine, Bowdoin College, (Brunswick,)	60
Medical School of Dartmouth College, (Hanover N. H.)	80
Massachusets Medical College, (Boston,)	130
Berkshire Medical Institution, (Pittsfield, Mass.)	100
Medical School of Yale College, (Newhaven Coun.)	110
Castleton Medical Academy, (Vermont,)	130
Medical School of the University of Vermont, (Burlington,)	60

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[*] New York Medical and Physical Journal, 1825, p. 140.

Medical School of the University of New York, Western District, (Fairfield,)	120
Medical School of the University of New York, (City of New York,)	196
Medical School of Pennsylvania, (Philadelphia,)	480
Medical School of Maryland, (Baltimore,)	300
Medical School of Charleston, (S. C.)	50
Medical School of Ohio, (Cincinnati,)	40
Medical School of Transylvania University, (Lexington Ky.)	200
Total,	2056

Prize Question proposed by the Royal Medical Society of Copenhagen.—Medicorum Daniæ unus, et quidem vir exquisitæ doctrinæ et acuti ingenii sub præmio *viginti quinque* nummorum Daniæ aureorum hanc quæstionem proponit:

"*An cutis humana sana ac integra sponte et sine ulla frictione liquida absorbet? et quænam tunc sunt talis absorptionis leges?*"

Certantium ad quæstionem solvendam tractationes idiomate vel Latino, vel aliâ linguâ exoticâ Europæ cultissimâ scriptæ, ante Calendas mensis Aprilis anni 1827, solito modo mittendæ sunt ad Societatem Medicam Regiam Havniensem, cui commentationum censura et prœmii adjudicatio mandatæ sunt. C. Otto, p. t. ab epistolis.

Report of the National Vaccine Board.—Vaccination has never undergone so severe a trial in London as during last year. The small-pox prevailed to an extraordinary degree. The deaths in London amounted to 1299, being a greater number than has been reported for some years past; and the disease has also been of a peculiarly virulent kind; for of the cases of natural small-pox admitted into the small-pox hospital, 41 per cent. terminated fatally. Such being the fact, it was to be expected that an increased number of cases of modified small-pox would occur among those who had been vaccinated. Accordingly it appears (although there are not any very positive documents on the subject) that cases of small-pox after vaccination have been more frequent than usual; and in some quarters they have been marked with unusual severity of symptoms. The report of the National Vaccine Establishment, while it admits some of these statements, remarks, that the subsequent disease is, in a great majority of instances, a mild one, and often as trifling as chicken-pox; and concludes with expressing confidence that although vaccination is by no means so absolute a protection as was at first maintained, yet "it possesses as many advantages over inoculation, as inoculation has over the natural small-pox, besides the peculiar merit that it communicates no contagion."

Two interesting documents are appended to the report; an account by Dr George Gregory of the cases in the small-pox hospital in London for 1825, and a statement by Dr Burnett of an epidemic small-pox which broke out in the summer of that year on board his Majesty's ship Phaeton. According to Dr Gregory's lists 419 cases were admitted, of whom 120 or 29 per cent. died. Of these 419 seven were not cases of variola at all, or of any of the accessory eruptive diseases. Of the remaining 412, two had been inoculated with small-pox, and one of them died. There were 147 cases of variola subsequent to alleged vaccination. Of these 113 were slightly attacked, and left the hospital within fourteen days; nine had their convalescence protracted to three weeks, from causes not essential to the disease; twenty-five had the disease in its usual form, and of these twelve died. The mortality among the vaccinated was, therefore, eight per cent. The remaining 263 were cases of natural small-pox in the unprotected; and of these 107 died, that is 41 per cent. On inquiring into the particulars of the fatal cases after vaccination, Dr Gregory found very good reason to doubt the assertion of its opponents, that the subsequent disease is often severe, although the operation has been properly performed; for among the twelve cases the scar was hardly, or not at all perceptible in five, too small in three others, and too large in the remaining four, besides that, in several of the last seven, it had not the radiated appearance of a proper vaccine scar. He has not given a similar statement with respect to the thirteen favourable cases of regular small-pox after vaccination.

The statement of Dr Burnett is more unfavourable. The disease was introduced into the Phaeton by one of the crew, who, shortly before it sailed from Portsmouth, had been visiting his friends in a house where the small-pox prevailed.

Eighteen were attacked, and three died. Of the three fatal cases one had not been vaccinated; another was vaccinated, but only ten days before he was attacked; the third declared he had previously had small-pox, and showed the surgeon the marks of it. Of the remaining fifteen two were unprotected. Thirteen had been vaccinated; and, with the exception of one, the mark was that of a perfect vaccine vesicle. Of these three may be said to have had the disease severely, *though none died;* that is, one had confluent pustules; and the other two, as well as that just mentioned, had secondary fever, one of them, however, slightly. Even in the worst case, the patient, a midshipman, returned to duty twenty-six days after he took ill. While the cases may be therefore called severe, they were not peculiarly so; and never, so far as appears, were they dangerous.

These two reports, while their publication shows the impartiality of the Vaccine Board, and their resolution not to withhold a single authentic fact in regard to the apparent failure of vaccination, are well calculated, when duly considered, to maintain the public confidence in vaccination. And we are happy to add, that the confidence of the public is on the increase; the number vaccinated by the stationary vaccinators being 2000 above that of any former year, and many persons of the lower ranks having had their children vaccinated, although the modified small-pox had appeared in their families after vaccination.

Antiquity of the Cow-Pox, and Origin of the Small-Pox from it. (Hufeland's Journal, February 1826.)—The Pope's physician, Dr Prela, has with great probability proved, particularly by passages from Pliny and Celsus, that vaccination was known in ancient times under the name *Boa*, by which its origin from the cow is designated, and on this he has founded the ingenious hypothesis, that the small-pox gradually developed itself by the action of the cow-pox on the constitution; so that the present removal and prevention of the complaint by vaccination, is only to be considered as a return to the old state. These opinions are detailed at length in a separate publication from Prela, under the title *Il Boa di Plinio, congettura sulla storia della Vaccinazione, Milano* 1825.

Improvement in the Average Mortality in France. (Archives Générales de Médecine, Mars 1826.)—An interesting memoir was lately read before the French Academy of Sciences, by Benoiston de Chateauneuf, on the relation betwixt the laws of mortality in France in the years 1780 and 1825. In the former period, 50 per cent. of the children died within two years, but in the present time it is reduced to 38.3. Fifty-five and a half per cent. died before completing their tenth year, in 1780, but in 1825 only 47.7. Of a hundred births, only 21½ formerly reached the age of fifty; the number is now increased to 32½. The annual mortality is improved from one in thirty to one in thirty-nine; the annual births are diminished from one in twenty-five to one in thirty-one; and the annual marriages from one in 111 to one in 135. The average fecundity continues, as formerly, four to each marriage.

To these facts we may add the following, taken from a memoir by Villermé, read before the Academy of Medicine, relative to the mortality of the different *arrondissements* of Paris. Apportioning to each arrondissement the deaths belonging to it which happened in the hospitals, it appears, that in the quarters occupied chiefly by the rich, the annual mortality is so low as one in 43, or even 45; that in those inhabited chiefly by the poor, the average is so high as one in 25 or 24, and that the proportion in the other parts of the city observes nearly the ratio of the wealth and consequent ease of the population. The proportion of male to female births is 16 to 15. The proportion of still-births is one in sixteen in private houses, one in thirty-one at the hospital of Maternité. These facts are derived from observations kept for five years, namely from 1817 to 1821, inclusive.

Remarks on the Human Stomach, by Samuel Thomas von Soemmering. (Memoirs of the Bavarian Academy of Sciences, vol. viii. p. 77—86.)—Soon after the new edition of my programm on the corporeal difference between the Negro and European, Mr Billmann, in Cassel, drew my attention to the fact, that, in respect to the stomach, there is also a great difference between these two races of mankind. The form of the stomach altogether appears, in the negro, rounder, or at least shorter, than in the European. If we compare, in the natural state, the stomach of a negro, fourteen years old, and of an European girl of twelve years, we observe this difference, particularly at that part commonly called its *cul de sac.* This blind sac is evidently more globular in the negro, and, above the junction of the œsophagus, more convex than in the European. A similar but still more remarkable roundness of the stomach may be observed in the stomachs of apes, and which may be seen in Daubenton's excellent plates to Buffon, just as it is found in the natural state. Thus, also, in the form of one of the most essential organs, namely that of the stomach, the negro appears more to resemble the ape than is the case with the European. I am not aware that any one has noticed this difference before myself. Neither Charles White in his "*Account of the regular gradation in Man,*" nor William Lawrence in his "*Lectures on Physiology, Zoology, and the Natural History of Man,*" which, up to the present time, is the most perfect work on the differences of the human race, have touched this subject. Whether this remarkable difference can be looked upon as proof in support of the opinion of several natural historians, which is every day gaining more ground, viz. that mankind must have arisen from more than one original stock, and in what respect I shall, therefore, be obliged to change the opinion which I have before given, I will for the present pass by. But I must here formally protest against this new discovered corporeal difference being used as a plea in behalf of the cruel treatment which the Europeans continue to inflict on the negroes.

Another observation on the human stomach regards the description given by Sir E. Home,[*] of the contraction in the centre, which appeared to him so remarkable, that he therefore divided the stomach into the pyloric and the œsophageal halves. It is quite true that this contraction in the stomach is met with as Meckel has mentioned,[†] and which I have often observed myself. But as this appearance, as well as I recollect, only shows itself in the female subject, and as Home has drawn it from one female body only, I regard it as immaterial, or at least deviating slightly from the usual state. I am greatly mistaken if it is not the effect of the tight lacing,[‡] particularly from the pressure of the breast bone of the stays; for such a bone laced only moderately tight presses just on the middle of the stomach, so as to divide it into two parts. This machine, made either of wood, bone, or steel, works like every other mechanical irritation applied to any part of the living viscera. This must also be much more the case in the female stomach, as I have already remarked in my Splanchnology, [§] as it is distinguished by its length from the broad roundness of the male stomach. But if such a contraction of the stomach belonged to its natural state, there must be a disposition to it, at least in some degree, apparent in the stomachs of children, in which, however, not the slightest trace of it is to be found.

The third observation on the human stomach concerns its lower end, or the *pylorus.* On examining the proper opening of the pylorus, which is most readily and easily done when the stomach is dry, and has been moderately distended with air, it generally appears more or less elliptical, seldom circular, consisting of a ring, occupied by concentric circles, which are different both as to their size and the direction which they take. Sometimes the pylorus, that is, the fold or ring which forms it, is broadest at the posterior surface of the stomach, and towards the anterior surface is narrowed in the form of a projecting fold. The longest diameter of this opening extends obliquely from before backwards; the smallest diameter, on the contrary, from above, downwards, or from the right to the left side, or the lesser to the larger curvature. Sometimes the ring of the pylorus is, on the whole, remarkably broader, and its opening somewhat smaller. It has, therefore, its greatest breadth on the smaller, and the largest on the greater curvature. Its elliptical opening appears with its longest diameter between the larger and less curvatures, with its smallest diameter, on the contrary, from behind forwards, or in the direction between the anterior and posterior surface of the stomach. Sometimes the ring of the pylorus is broader, and its opening proportionally smaller; then its greatest breadth is not on the small, but on the greater curvature, and the longest diameter of its opening extends not from the right to the left, but from the anterior to the posterior surface of the stomach. Sometimes the ring of the pylorus is, proportionally to the size of the stomach, very broad, and its opening, at the same time, very small. Between these three or four remarkable differences in the form of the pylorus, its other varieties may be properly classed; but as we have an excellent monography on this subject from Leveling,* and a good description of this part from Haller, I will confine myself to the notice of a construction of the pylorus which was first discovered by one of my pupils, Scheuzer. This is a ring or circle of glands contained in the fold of this part, which, on the careful removal of the peritoneum and cellular membrane, may be shown. I have had the honour of showing this ring to the Academy, both in the natural state, and in two engravings. The natural size, the peculiar form, the true situation, the peculiar connection, as well as the line of demarcation marked out by it between the end of the stomach and the commencement of the duodenum, may be best seen in a preparation which has been kept in spirits of wine, and will then be so clear as to supersede, now, on my part, a more detailed description. F. Magendie distinguishes † in the stomach la *partie splenique* and *pylorique*. At the pylorus, he says, the mucous membrane forms a circular fold, called the *pyloric valve*, and that a fibrous dense tissue is found between its plates, called by some authors ‡ the *pyloric* muscle. This valve of the pylorus serves both to prevent the return of the matter contained in the duodenum into the stomach, as well as to keep the food and chyme in this viscus.

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[*] Philosophical Transactions for 1817, part ii, Pl. xx. is evidently a rare malformation, either hereditary or the result of disease.

[†] Deutsches Archiv fur Physiologie, 4 Band. 1818, p. 130.

[‡] Preisschrift uber die Schädlichkeit der Schnürrbruste, Leipzig, 1788. *See* Soemmering in the enlarged edition. Berlin, 1793.

[§] In so far must C. G. Ackerman's Dissertatio de discrimine sexuum præter genitalia, Moguntia, 1788, "Intestinorum tractus nullum sexus discrimen ostendit," be altered.

Melanosis of the Stomach. (*Archives Générales de Médecine, Mars* 1826.)—It has been shown by several remarkable cases, that this singular disease is by no means confined to the lungs, but pervades various textures of the body. The following, however, is the first instance in which it has been observed in the stomach. The particulars prove, that in this situation, as in others, it is so far from being a malignant disease, that it may even exist without any obvious symptom whatever. A woman, about fifty years old, died under Lerminier's care at the Hospital of La Charité in Paris. She was admitted on account of a general dropsy and ascites which appeared to be independent of any affection of the heart, liver, or other important organ. It commenced with anasarca of the limbs, and advanced very slowly; and her breathing was not affected till the belly became distended. During the six weeks she past in the hospital before her death, the dropsy continued without change, she got gradually weaker and weaker, and at length she had occasional purging, and great disinclination for food. She had no pain in the stomach, however, no vomiting, and nothing unnatural in the state of the tongue. The heart was natural; the lungs gorged posteriorly, but otherwise sound; the liver healthy; the thoracic duct was free and contained the usual serosity. The spleen, pancreas, mesenteric glands, and urinary organs were all of natural appearance. The stomach contained three glassfulls of a liquid as black as ink, which stained paper like the colouring matter of the choroid coat of the eye. The surface of the stomach, when washed, was seen studded with innumerable black spots of a circular or oval form, varying in size from that of a millet-seed to that of a shilling, confined to the mucous coat, and surrounded, at least the larger ones, with livid redness and greater firmness of the membrane. The interstices were of a pale whitish colour, as in the healthy stomach. Except around some of the larger spots the villous coat was of natural consistence. There was nothing else worthy of observation in the whole alimentary canal. The appearances in the stomach taken together bore some resemblance to the effects of the concentrated sulphuric acid. Andral, the relator of this case, conjectures that the black fluid in the stomach must have been secreted very soon before death, if not after it, because, if the secretion had been going on for some time, the woman would have vomited some of it. It is singular that so extensive a derangement should exist without causing any symptom. It is hardly possible at least to connect the dropsical affection with it; and even the anorexia, the only symptom referrible to the stomach, might have arisen from the general depression of the system accompanying the dropsy.

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* Diss. inaug. sistens Pylorum anatomico-physiologia consideratum. Argentorati, 1764.

† Precis Elementaire de Physiologie, tom. ii. Paris, 1817, p. 72.

‡ Magendie mentions the name of no individual author, but probably alludes to Abernethy. *Vide* Physiological Lectures, London, 1817, p. 178.

Case of local Self-Combustion. Extracted from the Journal of the Hamburg Hospital, (*Hecker's Annalen, August* 1825.)—Margaret Frederica Cath. Heins, of delicate constitution and florid complexion, had for some time past been affected with pain of the head and giddiness to such a degree, that she was compelled to give up her employment as housemaid, and apply herself to something which required less exertion, as that of sewing. Her menses had appeared in her 13th year, and continued since but in very slight quantities; she had also had the diseases to which children are subject, such as measles, small-pox, &c. without any bad consequences. On the 21st of January 1825, as she was occupied in sewing, she felt an extraordinary sensation of heat all through the body, and in the fore-finger of the left hand a violent burning sensation; at the same instant there proceeded from the same finger a blue flame, about an inch and half long, which emitted a peculiar sulphureous smell. The flame could not be extinguished, either with water, or by means of a wet towel put round the finger. On putting the hand into water, the whole hand appeared on fire. The patient went, in a great hurry, from the house in which she was at work to her home, and wrapped the hand in her apron; this, together with her clothes were considerably burnt, but still the flame was only perceptible in the dark. On her return home, she dipped her hand in milk, and continued this during the night, by which means the flame was extinguished; the burning heat in the left hand, together with the occasional emission of the sulphureous smell, continued. After a venesection, and the use of some medicines, the patient got better, but she always retained a burning sensation in the left fore-arm, which, very often, emitted a smell like that of sulphur.

On the 25th of February she was admitted into the hospital. The internal surface of the middle of the hand was at this time covered with small bladders, and on one or two of the fingers there was the same appearance. The bladders somewhat resembled those observed in gangrene; they were not, however, so rapid in their course, and the redness about the circumference was also of a darker colour. Friction with wool produced in the fore-finger a sensation of burning. The appetite was slight; the thirst considerable; pulse tranquil, and, independent of pain in the fore part of the head, there was no mark of a disordered state of body. In the night of the 26th and 27th the patient slept well; the bladders did not spread any farther, but the sensation of heat still continued in the left hand, and the motion of the volar surface and the fingers occasioned great pain. In this hand the thermometer was at 87° Fahr., but in the other hand, on the contrary, only at 70. Several experiments were made with different combustible substances, which, however, showed nothing worthy of notice. Also the best electrometers remained unacted upon, whilst the patient was placed on the isolated stool. Bad taste in the mouth, and a bad appetite were now the only symptoms of a deranged state of health.

March 1st. Electric sparks were drawn from the points of the finger of the left hand, which, however, caused the patient great pain. On the following day, the burning showed itself in the points of the fingers of the same hand, particularly in the fore-finger, much stronger than before. No fresh bladders made their appearance. Between this and the 5th of May, she remained just in this state; the increase of temperature in the left hand still continued, with the sensation of heat, and the occasional burning. In other respects the girl was healthy, and, feeling a desire to resume her avocations, she was discharged. This is the simple observation of a most remarkable case, which, in reference to the absence of the usual circumstances in self-combustion, particularly the *non*-destruction of the affected part, is the only one of the kind yet known. In the only analogous case, in a man where the arm was but partially attacked with fire, so that he could call persons to his assistance, and show them the phenomenon, there was all of a sudden pain in the arm, like that from the blow of a stick, and, at the same time, he observed a spark which burnt the shirt to ashes. *

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* K. A. Rudolphi, Grundriss der Physiologie, Bib. I. S. 212. *See* Pierre Aimé Lair sur les Combustions Humaines produite par un long abus des liqueurs spirituelles, Paris, 1800. Versuch über das Verbrennen menschlicher Körper, &c.

Case of Spectral Illusion from suppressed Hemorrhoïs. **(*Hufeland's Journal der Practischen Heilkunde*, *September* 1824.)**—The following seems to be an unquestionable instance of this singular and rare affection. A gentleman of Carlsruhe in Silesia, 60 years of age, and of upright character, liberal, unprejudiced, constantly engaged with his profession, and inclined to nothing so little as to communings with the kingdom of spirits, had long enjoyed good health, except that he had occasional colic on exposing himself to cold, was liable from time to time to a hemorrhoidal flux, and had a cataract in one eye, and dimness and weakness of sight in the other. A short time before he was seized with the affection about to be related, he received a visit from his niece, who was far advanced in pregnancy, accompanied by her husband. Soon afterwards the family received an alarm from a house taking fire near their dwelling. On the evening of that day, his wife remarked that he was restless, and put questions in a singular way. About six, when the candles were lighted, he insisted with his wife, that his niece had entered the room, taken his hand, and retired on his rising to meet her; that her husband escorted her; and that three other persons whom he did not know were also in the room. On going up stairs to supper, the spectral company went along with him, and after supper they returned with him to the lower room, and two of them went to bed with him. At length, tired of the illusion, he drew the coverlet over his eyes, and, leaving the spectres to their fate, fell asleep. Next morning his spiritual friends did not make their appearance; but a new illusion of sight took their place. He thought the walls of his apartment were all checkered like a chess-board, and so vivid was the deception, that it obliterated a number of engravings which hung on the walls. This lasted two days, and after it disappeared his vision returned to its natural state. For some time after he complained of weakness, giddiness, and anxiety in the chest. His appetite, however, was good; he slept well; and the pulse was natural. He had not had any hemorrhoidal discharge for some time before. Gentle laxatives; bathing of the feet; and afterwards the tincture of cinchona restored him soon to his usual state of health. His mind, excepting so far as regarded the spectral illusions, appears to have been quite entire.

Experiments on the Presence of Water in the Lungs after Drowning. By Professor Mayer of Bonn. (*Hufeland's Journal der Practischen Heilkunde*, *September* 1824.)—Many experiments have been made to decide the question, whether water is ever or always found in the trachea and lungs of those who have been drowned; but the results have been very discrepant. Mayer has repeated the experiments of former authors under all possible circumstances, and has arrived at the conclusion, that in every instance of death by drowning,—provided death really arises from the mere obstruction of the breathing by the water, and not from apoplexy or some other affection occurring at the moment of immersion,—water will be found in the lungs. He has made the trial with pure water, with water coloured by red lead, or cinnabar, and with a solution of prussiate of potass, which was sought for in the lungs by the test of the muriate of iron; and in every instance, whether the animal was allowed to rise to the surface or not, whether it was drowned in cold or in warm water, and whatever was the species of animal, he found water not only in the windpipe and its great ramifications, but likewise in the minute bronchial tubes. Sometimes it was found in substance, but more commonly it was in the form of froth; and he attributes the non-discovery of water by some experimenters to their having always expected to find it in substance.—In an appendix he has added some observations on the respiratory movements which have been noticed by Beclard and others in the fœtus while enveloped in the membranes. Having drowned a pregnant cat, and removed the fœtuses from the uterus without wounding the membranes, he remarked that, whenever he irritated them by a mechanical stimulus, movements of respiration took place. After all signs of life had ceased, he found on dissection that the meconium was mingled with the liquor amnii, and that in three of the fœtuses little fragments of meconium were in the windpipe and stomach. These movements never take place without the application of some

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Hamburgh, 1801. As an addition to the same work, *See* Ueber Selbstentzündungen in organisirten und leblosen Körpern, edited by C. W. Hiller, Hamburgh, 1804. J. Henrich Kopp Ausführliche Darstellung und Untersuchung des menschlichen Körper, Frankfurt A. M. 1811. Treviranus Biologie, 5th Vol. p. 181—139.

irritating cause, and consequently they do not prove that the fœtus in utero inhales and exhales the liquor amnii as some have imagined. The introduction of the liquor amnii into the windpipe, in consequence of these respirations taking place during difficult labour, he considers to be a probable cause of the difficulty and impossibility often experienced in rousing still-born children; and therefore he suggests the propriety of removing the inhaled fluid with a pipe and syringe before resorting to artificial respiration.

Case of the discharge of Hair through the Abdominal parietes. (*Rust's Magazin fur die gesammte Heilkunde*, xx.1.150.)—A woman who had given birth to three children, ceased to menstruate, and soon after observed a painful circumscribed tumour about two inches beneath the navel. In three months it grew to the size of a child's head, and then became stationary. At the same time, the lower belly became enlarged as from pregnancy, and she actually brought forth a full-grown child, twelve months after the cessation of the catamenia. In the latter months of her pregnancy, the tumour was flattened against the abdominal parietes, and pushed upwards to the navel. After the cessation of the lochia, it increased in size, and became more painful. The woman, notwithstanding her sufferings, did not seek medical aid till she had been fifteen months ill. At this time she was hectic, had colliquative diarrhœa, and frequent vomiting of food, and was very much emaciated. The swelling was round, seven inches in diameter, and very painful when pressed. The integuments over it were inflamed, and directly under the navel fluctuation could be felt. No information could be procured of its nature by examining the organs of the lower belly, through the vagina and rectum. After cataplasms had been applied seven days, the tumour burst, and discharged a large quantity of fetid pus; and, at the same time, the patient had several discharges of the same sort of matter by the anus. The latter discharge soon ceased, but the former continued; and along with it several fine hairs were passed. The opening was then enlarged first by a sponge tent, and then with the knife; and the reporter withdrew from the cavity a quantity of pus, with fourteen white masses, composed of hairs from half an inch to two inches long. Some hopes were then entertained of her recovery; but her strength was too much exhausted, and she gradually sunk. On opening the body, it was found that the matter was contained in a regular sac, connected with the right ovary, covered by an extension of the peritoneal membrane of that organ, and united anteriorly with the abdominal parietes, posteriorly with the ascending colon, and above with the round ligament of the liver. The intestines were sound.

Case of Somnolency caused by Lumbrici. (*Rust's Magazin für die gesammte Heilkunde*, xx. I. 157.)—A girl, seventeen years of age, whose catamenia had not commenced, had slept uninterruptedly for four days and nights. Her physician, on his arrival, found the abdomen tense, the pulse full and feverish, and the tongue loaded. Learning that she had often been troubled with worms, and that she had passed none for half a year, he resolved to treat the case with anthelmintics. Laxatives and anthelmintics were therefore given, (of what sort the report does not mention,) and next day she was seized with colic pains, and discharged an entire ball of twenty-four lumbrici. From that moment her somnolency left her, some time afterwards the catamenia made their appearance, and she soon got quite well. In the 13th volume of Corvisart's Journal de Médcine, there are two cases described, which appeared to have been of the same nature, and which terminated fatally. Both were adults, the symptoms antecedent to death were of a comatose nature, and no other appearance could be detected in the body, except an enormous accumulation of lumbrici in the intestinal canal.

Cure of a case of Polypus of the Frontal Sinus. (*Rust's Magazin fur die gesammte Heilkunde*, xx. 2. 317.)—The subject of this case was a man, otherwise of sound constitution. When he was first seen by the surgeon who relates the case, J. F. Hoffmann of Bernberg, both nostrils were filled with the polypus, which in moist weather even protruded beyond them. It could be likewise seen projecting about half an inch into the posterior part of the throat, and when the uvula and velum were raised, a portion as large as a hen's egg became visible. It had a fibrous, fleshy texture, a pale red colour, and was nowhere inflamed. A considerable quantity of fetid puriform mucus issued from the nostrils, apparently an altered discharge of the nasal mucus, as there was not any erosion on the tumour. The polypus appeared to adhere in various points to the canal of the nostrils. The speech was much injured, the movements of the tongue impeded, the sense of smell quite gone, and deglutition, particularly of solid food, difficult. The patient felt little or no pain, except when he sneezed, and then he felt a sense of tearing and pressing on the sides of the nostrils. Over the right frontal sinus, the forehead projected in the form and of the size of half a goose's egg, and the tumour extended also to the left sinus. It was not elastic; but about the centre an obscure fluctuation could be felt; and the patient complained of a slight sense of heat, and beating pain in it. The right eye protruded, the pupil was turned outwards, the vision consequently was double, the lacrymal sac distended, and the tears ran down over the cheek, as the duct was obstructed. By the separation of the nasal bones and cartilages, the nose was enlarged to the breadth of two inches at the point. The man had been attacked several times in the course of his life with eruptions, apparently of a scabious nature; but had enjoyed otherwise good health till about six months before, when he had a severe cold. The swelling of the forehead commenced two months afterwards, and was preceded and accompanied by general headach, and feeling of weight and pressure over the eyes, giddiness, and dulness of the understanding.

Not being quite satisfied at first of the seat of the root of the polypus, the surgeon delayed for some time the laying open of the frontal sinuses; and, contenting himself with the application of poultices to accelerate the suppuration which seemed to be approaching, he gave tartar emetic internally, and attempted to remove part of the tumour by simple extraction. He succeeded accordingly in removing several fragments, particularly one of considerable size from the throat, in consequence of which the patient experienced much relief, especially in swallowing. But in four days the portions removed were supplied by a spongy, slimy after-growth. Astringent snuffs were of no use whatever. In ten days, therefore, he determined to lay open the tumour in the forehead. A crucial incision being made down to the bone, he was obliged to delay the rest of the operation, on account of a profuse and deep-seated hemorrhage, which required strong compression before it could be arrested. Next day, on removing the dressings, a spongy, fleshy mass projected. Various rough portions of the bone covering the right sinus could be felt with the probe, and the partition between the two sinuses was apparently destroyed. The distance of the inner and outer plates of the sinus was three quarters of an inch; and the inner plate seemed to be softened. After several unsuccessful attempts, the probe was also introduced downwards into the throat. These examinations did not cause the slightest pain.

It was evident that the tumour originated in the frontal sinus, and extended thence into the nostrils and throat; and that, on acount of the extent and complexity of its base, the only chance of cure was by stimulants and corrosives. A large portion of the softened external plate of the sinus was therefore removed, to make room for future operations; and a portion of the spongy tumour being cut away, the surface was touched with the muriate of antimony. This application was repeated twice in four days, by which time a very fetid purulent discharge was formed. In four weeks, however, little or no progress was made; the excrescence growing again as fast as it was destroyed with the caustic. M. Hoffmann then succeeded, however, in passing a probe into the right nostril; and taking advantage of this, he determined on trusting the cure to the seton, and therefore introduced a broad cotton tape through the whole length of the tumour. It was drawn every day, and each time the fresh portion was besmeared with the red precipitate. The cavity of the frontal sinus was likewise occasionally sprinkled with the powder. This method of treatment was attended with rapid amelioration. The tumour in the right nostril gradually diminished, seeming to dissolve away in slime and pus, several pieces of bone exfoliated from the aperture in the forehead, the sore put on a healthier appearance, the bad smell ceased, the parallelism of the right eye was restored, and the tears resumed their natural course. Judging it prudent to establish a derivative discharge, a seton was then introduced into the nucha. As a spongy mass still existed in the left frontal sinus, it was resolved to apply the trephine there also, and to treat the left side of the tumour in the same way as the right. But it was subsequently found that a clear passage existed around the tumour through the left nostril; and an experiment was therefore tried, in the first instance, with injections of nitrate of silver, five grains to the ounce. This treatment succeeded; the tumour gradually melted away in mucous and purulent matter.

Cinchona was given about this time to support the strength. The fetid smell had now entirely disappeared; the mucus discharged from the nostrils, and the matter secreted from the wound were well-conditioned, and the bottom of the wound was covered with healthy granulations. The passage of the nostrils became free, the sense of smell returned, the nose recovered considerably its natural dimensions, the lacrymal discharge ceased, and the double vision disappeared with the restoration of the parallelism of the eyes. The wound and the nostrils were occasionally washed with a mixture of chamomile tea, sugar of lead, and oxide of zinc; afterwards, it was necessary to check the granulations with lunar caustic; in six months the cure was complete, and but a small depression was left on the forehead. The cure continued permanent four years afterwards.

Case of Inflammation of the Cerebral Veins. (*Revue Médicale, Avril* 1826.)—Late observations, particularly in Britain, have shown that inflammation of the veins is of more frequent occurrence, arises from a greater variety of causes, and exists as the foundation of more diseases than had been supposed when it was first taken notice of. It is now familiarly known as the consequence of venesection, and has been likewise frequently witnessed after ligatures of the veins. But it has been farther observed to follow ordinary operations, such as amputation, or lithotomy, when the vessel was simply divided; and, in consequence of that discovery, the surgeon can now account for several of the disorders subsequent to operations, which disorders were formerly unintelligible, or were referred to the vague influence of vulnerary irritation. Inflammation of the veins has likewise been remarked in internal diseases, and as arising, therefore, from internal causes. Thus, it has been detected in the abdominal, and particularly the hypogastric veins of puerperal women; and a few cases have been related of its occurrence in the internal veins of the head. The most distinct case of this nature hitherto published, is one by Dr Abercromby, in the eighteenth volume of this Journal. The following, by Gendrin of Paris, is a valuable addition to the list.—A young woman was safely delivered of her third child; and, during her pregnancy she had enjoyed excellent health, except that for the last month she had frequent headach, and a presentiment that she should die. A few days after delivery, this presentiment became firmly rooted, in consequence of her observing a small quantity of blood to flow from the mamma, when she was drawing the nipple with a bottle. From this time she complained constantly of pain in the left side of the head, and the milk ceased to be secreted. Leeches were applied to the head and vulva, but without any benefit. On the evening of the 17th day after delivery, the right-arm and leg became benumbed, and she lost the power of moving the former. Next day the paralysis increased, and her speech was affected. On the subsequent day she was bled from the arm. When Gendrin first saw her, on the evening of the 19th day, the right-arm was immoveable and insensible, the right-leg immoveable, but slightly sensible, and both of them quite relaxed; the pupils were sluggish; the pulse 95, having been natural till that day; the urine discharged involuntarily; and she could speak only a few monosyllables. Next day great agitation supervened, the whole right-side was quite insensible, the pulse rose to 136, and she had subsultus tendinum; blisters and leeches were ordered; and for two days afterwards her state improved considerably, the pulse falling to 96, and the palsied limbs having recovered some sensibility. But, on the evening of the 22d day, she had convulsive movements of all the limbs, rigidity of those which were palsied, and she frequently cried out. These symptoms went on increasing till the 26th day, when the left eye was found squinted upwards. Soon afterwards the contractions of the limbs ceased, she became quite insensible, and death took place the same evening.

The body was opened twenty four hours afterwards, by which time, although in the month of February, putrefaction had begun. The middle cerebral vein of the left side was enlarged to the size of a writing-quill, and its cavity was obliterated with yellowish puriform matter. The same vein of the right side was also similarly affected. The whole cavity of the superior longitudinal sinus was likewise obliterated, and in its place there was a greyish brittle cellular tissue, infiltered with yellowish pus. On the lower and external surface of the left middle lobe and adjoining parts of the posterior and anterior lobes, there was a thin layer of blood adhering to the arachnoid coat; and the pia mater in the neighbourhood was injected with reddish serum. In the left hemisphere of the brain there was a purulent cavity, external to the ventricle, occupying the whole posterior and part of the middle lobe, as large as a hen's egg, containing pus, blood, and softened cerebral matter, and surrounded by red and brown points and streaks. The organs of the chest and belly were natural in appearance. The author thinks the order of the symptoms proves, that the affection of the vein was the primary disorder and the cause of the rest, that the congestion and effusion succeeded it, and that the inflammation of the left cerebral hemisphere took place last, about the time when its characteristic symptoms, rigidity of the limbs, and frequent cries without apparent cause, were first observed.

Case of Recovery from Rupture of the Uterus. By Lewis Frank, Physician and Counsellor to the Dutchess of Parma. (Annali Universali di Medicina, Febbr. 1825.)—A woman, 44 years old, in her sixth pregnancy, was taken with labour-pains at the usual time. While standing, with the assistance of the midwife, she was suddenly seized with faintness and vomiting; and while her husband and the midwife were assisting her into her bed, she complained of a sense of tearing in the belly, and a feeling as if there were two fœtuses. The belly soon began to swell, the vomiting recurred frequently, and the breathing became interrupted. Professor Rossi being called to see her, recognised a rupture of the uterus, and after consulting with some of his friends, proceeded to extract the child by the operation of gastrotomy. The incision was made on the left side of the hypogastrium where the feet could be felt, and in no long time the fœtus and secundines were extracted. The child gave some signs of life, but soon expired. Forty days after the operation, the woman was restored to a state of perfect health, except that she had a hernial tumour of the size of a large apple in the seat of the incision. Three years afterwards she became again pregnant, and brought forth a seven-month's fœtus, which lived fourteen days.

On the use of the Pomegranate Bark as a remedy for Tænia. (Hufeland's Journal der Practischen Heilkunde, August 1825.)—Dr Wolff of Bonn has published some good cases exemplifying the efficacy of the bark of the root of the pomegranate in obstinate tænia. This remedy was proposed not long ago in a paper in the London Medico-Chirurgical Transactions, by Mr Breton, who borrowed the practice from the natives of Hindostan; and since then it has been successfully employed by Dr Gomés of Lisbon. Dr Wolff has given it in ten cases. In three it was eminently successful; in five it had little or no effect; in the two others the existence of the disease was doubtful. He says it has the advantage over oil of turpentine,—the most efficacious of the remedies yet proposed,—in being quite harmless, and not nearly so disgusting, in producing its effect with great rapidity, and in not requiring any preparative treatment. He generally used a decoction made by boiling to 12 ounces an ounce of the half dried bark in 24 ounces of water; and of this he gave in the morning two ounces every half hour, as directed by Mr Breton. Some vomiting occasionally took place before the requisite quantity was taken; but, on intermitting the medicine for an hour or two, the stomach bore it better. In one case, after six doses were taken, the patient had six fluid stools, and a worm was discharged *alive*, measuring seven Cologne ells. Several fragments followed, and on the same day the patient felt quite well. In the second case, the remedy was twice tried unsuccessfully; but on trying it again in stronger doses, the same effects followed as in the former instance. In the third the good effects were obtained with the first doses. In all, the action of the remedy was accompanied with nausea, and sometimes with vomiting,—symptoms, however, which Dr Wolff ascribes not to the remedy, but to the agitation into which the worm is thrown. In the five unsuccessful cases he suspected the bark was not of such good quality as the first sample he procured, the plant having been more sickly, and having flowered before the bark was gathered. But his want of success he is rather disposed to attribute to the remedy not having been given at a time when the worm is most irritable, and therefore most easily acted on. He says he has observed that remedies are always most likely to succeed if given at the time when fragments of the worm are discharged naturally; and supposes that at this time it undergoes some change, during which it is more sensible to external agents. In one of the unsuccessful cases it operated partially, causing the protrusion from the anus of two ells of the worm. Various poisons were applied to this portion with the view of killing the animal, but without avail. Even in the concentrated Prussic acid it was observed to contract and elongate itself, and no injury was produced.

Case of recovery from Poisoning with Sulphuric Acid. (*Horn's Archiv. Mai und Juni* 1825. p. 454.) A female servant, 19 years of age, in a fit of passion, swallowed the concentrated sulphuric acid. She was immediately seized with great weakness and such acute pain in the stomach, that she cried aloud for help. A physician was immediately procured. An hour after she swallowed the poison, he found her speechless, with an almost imperceptible pulse, frequent fainting fits, paroxysms of trismus, difficult and convulsive deglutition, and instant vomiting of every kind of drink. She gave him to understand that she did not suffer much pain, but she had apparently resolved to conceal her sufferings with the view of concealing their cause. The tongue, inside of the cheeks, uvula, tonsils, and back of the fauces were yellowish white and wrinkled, the teeth surrounded by a black circle, and the lips yellow-coloured. The stuff she vomited was black, like a mixture of sulphuric acid and blood, and it corroded linen-cloth and leather. At midnight she confessed the cause of her illness; and then a solution of soap, chalk, milk, oleaginous matter, and farinaceous decoctions were given in profusion. Afterwards magnesia was given along with opium, and the stomach was fomented with a mixture of spiced vinegar and laudanum.

On the morning of the second day, her resolution to die was worn out by her incessant agony. She tossed about in bed, complaining of dreadful anxiety and excessive weakness, bewailing her unhappy fate, and the shameful and horrible death to which she had doomed herself, as she thought, without resource. The matters of vomiting were no longer acid, but she felt violent pain in the stomach and bowels, and a sense of burning in the throat; and the belly was tense, swelled, and tender; the inside of the mouth and fauces was covered with yellow spots, which were black in the middle, and vivid red on their margin; and the lips were dry like parchment. She was also still affected with frequent locked-jaw. The pulse had risen somewhat, the cheeks had a hectic flush, the urinary secretion was very scanty, and the bowels constipated. She had a horror at every kind of food and drink; and her medicines and diluents were administered by force, the teeth being kept apart during the attacks of trismus, by pledgets of leather. The tetanic affection likewise extended to the arms. On this account it was impossible to bleed her, as her physician desired. Leeches, however, were applied to the epigastrium. Fomentations with poppy-juice were then applied to the bites, and blisters were put on the calves.

On the third day the symptoms were somewhat mitigated. She vomited several lumbrici, which were dead, and partly corroded by the acid. On the fourth, the pulse was fuller; she had frequent purging of a yellow matter, mixed with clots of blood. The belly then became relaxed and less tender, and the urine flowed freely. Warm bathing was resorted to, and the anodyne fomentations continued. On the fifth, she was much exhausted, and the pulse feeble; the lining membrane of the mouth separated here and there, as also the cuticle of the skin. Constipation having returned, calomel was ordered by the mouth, and injections of assafœtida and Glauber's salt. These remedies caused many evacuations mixed with clots of blood, streaks of purulent matter, and fragments of the villous coat of the intestines (a pseudo-membrane.) Aromatic baths and emollient clysters were ordered. On the seventh, in consequence of some mental irritation, she had an attack of epilepsy, succeeded by delirium. She gradually got better, however, and in fourteen days from the commencement she was quite convalescent. The reporter adds, that before this accident she was passionate, revengeful, and quarrelsome; but was vastly improved in these respects afterwards, as well as in her general health.*

On the use of Belladonna as a prophylactic in Scarlatina. (*Rust's Magazin für die gesammte Heilkunde*, xx. I. 182.) Several notices have been published of late, particularly in German Journals, regarding the prophylactic virtues of the extract of Belladonna, in epidemics of Scarlatina. The following experiment made at the

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* Mr Ker junior of Paisley, whose very convenient apparatus for operating on small quantities of gases, is described in the 10th Volume of the Edinburgh Philosophical Journal, recommends that, to prevent accidental poisoning with this acid, all the sulphuric acid kept by druggists and apothecaries should be coloured blue by the addition of indigo, by which means it could not be mistaken for any other fluid. The quantity of indigo for this purpose is so small that it has no effect on the medical virtues or chemical properties of the acid.—EDITOR.

Orphan Hospital of Langendorf, in Prussia, by Dr Randhahn, Physikus of the place, is one of the strongest facts in favour of the alleged property. In one of the apartments of the hospital, two children were attacked by scarlet-fever in February 1825, and 160 others were exposed to it. A solution of three grains of the extract of Belladonna in an ounce of a vinous infusion of cinnamon, was given to each in small doses during the whole month of February. Up to the 21st of April, when the report was made by the physician, not a single case had occurred among them, and even two who lived in the same chamber with those affected did not suffer.

Effects of the Juice of the Manchineel. (*Archives Générales de Médecine, Mars* 1826.)—Many fabulous accounts have been given of the effects of the juice and seriform emanations of the manchineel, (*Hippomane mancinella*) and latterly it has been supposed to possess the power of acting both as a narcotic and as an irritant poison. The following experiments by Orfila and Ollivier prove that it is a pure irritant, and that it is the most energetic of all the vegetable irritants. It has a faint taste, succeeded by a sense of acridity, and afterwards by a sense of burning and very unpleasant constriction in the back of throat, lasting sometimes a whole day, and excited by the smallest drop. It has no effect on the skin of the hands; but if put on the cheek, it causes an erysipelatous redness, with slight swelling and continual itching, succeeded in a day by miliary vesicles, which desquamate in three or four days. When applied in the quantity of a drachm and a half upon the skin on the inside of the thigh of a small dog, it did not seem to cause much pain; but the animal limped with the leg to which the poison was applied. In an hour he appeared downcast and soporose, but could be easily roused; he then had some vomiting; the weakness increased rapidly, so that he was soon unable to stand; the tears ran over the face, the respiration became quick and feeble, and he died in about twenty-four hours, without having experienced convulsions, and apparently without at any time suffering pain. Five or six drops introduced into a wound killed guinea-pigs in the same manner. After death marks of inflammation were always found in the cellular tissue, extending over the whole abdomen and back as high as the middle of the chest; the tissue was injected, friable, and infiltered with serum. The abdominal and thoracic organs were healthy, and so was the brain. When introduced into the stomach in the dose of a drachm, it speedily caused vomiting, and the animal became dejected and wearied, and uttered at intervals a plaintive cry. Diarrhœa succeeded in an hour. The weakness and dejection gradually went on increasing; and death took place in about twelve hours, without any sign of an affection of the brain. The stomach and great intestines contained a large quantity of red matter, like the dregs of red wine, and a small quantity was likewise contained in the small intestines. The stomach, duodenum, and great intestines, had a reddish black colour internally, arising from excessive injection of their vessels. The jejunum was hardly affected; but the ileum had a cherry red colour, which increased in depth towards the colon. When half a drachm was injected into the jugular vein, the animal died in two minutes, and the blood in the heart was found coagulated soon after death.

These experiments prove that the juice of manchineel is a pure irritant, and that it should be ranked at the head of the vegetable Acrids. The effect produced by its application to the skin or a wound furnishes the purest example of spreading inflammation of the cellular texture.

Treatment of Traumatic Erysipelas by Cauterization. (*Revue Médicale, Fevrier* 1826.) Baron Larrey has lately revived the practice, recommended towards the close of last century by Pelletan, of treating the erysipelas arising from wounds by the superficial application of the actual cautery; and he reports very favourably of the result of his trials. In the paper he has published, two cases are detailed at length, as examples of what has frequently occurred in his practice. In one, a gunner of the horse artillery, who had received a severe contused wound on the leg from a kick of his horse, erysipelas began to appear on the fifth day, and spread rapidly over the whole leg. On the eleventh day it had advanced far up the thigh; phlyctænæ had arisen around the wound; the limb was much swelled, of a violaceous colour, and benumbed; and he had all the constitutional symptoms usually developed in the dangerous cases of this disease. Compresses soaked with camphorated vinegar were applied over the whole limb. But next day the local affection was undiminished, and the constitutional disorder had increased to such a degree, that the patient could not articulate for weakness. The actual cautery was then resorted to, and little superficial cauterizations were made at convenient intervals on the affected parts of the limb, to the number of fifty. The moxa was likewise applied to the epigastrium! Next day the erysipelas was almost entirely dissipated, the swelling of the limb considerably reduced, suppuration re-established in the wound, and the fever very much abated. From this period he recovered rapidly, a piece of bone exfoliated, and the wound soon healed.—The second case was that of a soldier of the foot-guards, who received a contusion on the head, with slight laceration of the skin, and was attacked with erysipelas around it on the fifth day. A crucial incision relieved him for a time, but the inflammation began to spread soon after, and in no long time occupied the whole nucha and shoulders. The usual fever also manifested itself, and increased rapidly. In this state of matters Larrey had recourse to the actual cautery, and touched the inflamed parts lightly on forty points at proper intervals. Next day, as in the former instance, the erysipelas had almost disappeared, the suppuration of the wound, which had never been entirely suppressed, became much more abundant, and on the tenth day the swelling of the head had fallen completely. An exfoliation of the bone under the wound succeeded; but nevertheless, the man was dismissed cured in forty days. When the hot iron is properly applied, no permanent injury is caused; the cuticle separates as on the other parts which had been affected with the erysipelas, only it is a little thicker, and the skin is not marked by the slightest scar. Some observations are appended by the author on the mode of action of the remedy; but they are very crude and hypothetical. Though termed cases of erysipelas, we suspect the foregoing are examples of spreading inflammation of the cellular tissue.

On the Preservation of Leeches. By Dr Pfeufer, Physician to the General Hospital at Bamberg. (From Horn's Archiv. für medizinische Erfahrung, January 1825.)—The best method of preserving leeches has lately engrossed much attention, but although I have carefully followed the directions of several who have written on this subject, yet all my efforts proved ineffectual; and the mortality which took place amongst our leeches, particularly in autumn and winter, the seasons they are most wanted, was the cause of much loss to the institution. This mortality seemed owing to a disease of the whole surface of their bodies, which became gradually rough, and covered with gland-like tubercles. This disease seemed to me to be caused partly by the animals being kept in vessels of too small a size for the numbers they contained, and partly by the want of proper food. I made numerous experiments in order to find out what sort of water and food agree best with these animals, but I obtained no satisfactory results. Soon after, however, I was agreeably surprised by receiving a communication from Mr Böschner, a surgeon residing at Coburg, in which he recommended a new method of preserving leeches. I lost no time in trying this method, and have the satisfaction to state, that the results far exceeded my most sanguine expectations. I may also state that Mr Böschner has tried it for several years, and with complete success. The vessel we use is a sort of tub, made of wood. It must not be made of oak, nor ought it to have been previously used for any other purpose. In order to contain 500 leeches, this vessel must be capable of holding about a hogshead and a half. It should be provided with a cock, placed about 2½ inches above its bottom, to serve for the purpose of *gradually* drawing off the water, which should be carefully done twice a-week. The fresh liquid must be let in gradually by means of a funnel, the tube of which should reach nearly to the bottom of the tub. River-water should be preferred, and in autumn and winter, it must be made very slightly lukewarm before use. The vessel, too, must be kept in a moderately warm place, and may be covered with a cloth, or a hair sieve. The fluid in which they are kept should consist of equal parts of river water and the mud of the pond or lake in which they were caught, one large or several small roots of sweet flag (*Acorus calamus*) or of orris (*Iris florentina.*) These roots grow, and soon shoot above water, and, at the same time, afford nutriment to the leeches, which adhere to them on all sides, and partly perforate them. It is really a pleasure to witness the avidity with which they attack this food. Mr Böschner affirms that, when they are preserved in this manner, they propagate and multiply rapidly. After being used, the leeches must be put into a separate vessel, reserved for that purpose. By following this method in our hospital, we have been enabled to use the same leeches several times in the same year. The advantages which distinguish this method from all others are, 1st, The greater room allowed for the animals to exercise themselves in: 2d, The provision of proper food for them, such as mud and sweet flag, &c. The constant changing of the water, and protection from light, ought not to be omitted. When it is necessary to transport them to any considerable distance, they should be placed in a large vessel filled with muddy fluid, and they should be jolted as little as possible.

Treatment of Chilblains with the Chloride of Lime. (*Revue Médicale, Fevrier* 1826.)—In a very obstinate case of chilblains, in a person very liable to them, and in whom the whole back of the hands was covered with large ulcers, M. Lisfranc tried the effect of the solution of chloride of lime. A bit of cloth, spread with cerate, and perforated with many holes, was placed next the ulcers, and over this a compress of charpie, steeped in the solution. The dressings were renewed every twenty-four hours. In three days the superficial ulcers were cicatrized, and the whole of them healed before twelve days.

Examination of the Question, whether the Medical use of Phosphorus internally is useful, injurious, or equivocal. By Pietro Moscati. (*Annali Universali di Medicina, Lugl.* 1825.)—Several attempts have been made to introduce this substance into medicine, particularly in Germany and Italy; but great doubts have justly been entertained by some of its safety, and by others of its efficacy. The observations of Moscati will account for the discrepant results which have been obtained by different individuals. He sets out with remarking, that, as phosphorus possesses the power of burning, at a low temperature, in air, and in some other gases containing oxygen, there can be little doubt that it must also sometimes catch fire in the stomach: that as the aeriform fluids in the stomach sometimes do not contain any gas capable of supporting its combustion, it may escape acidification, and that these two circumstances will account for its acting sometimes merely as an active stimulant, sometimes as a corrosive poison. In the way in which it has usually been administered, it exists generally in its simple state. For he has found that when reduced to fine powder by agitation in boiling water, and then made into an electuary, or when given in solution in alcohol and ether, it continues in the state of phosphorus. Some physicians have observed it to have no effect at all, either as a poison or as a remedy. The reason is that, when dissolved in alcohol or ether, it separates, in a short time, almost entirely in the state of fine powder; so that there can never be any certainty of the dose, if the solution is not recently made. For these reasons he suggests that it ought to be discarded from medical practice altogether.

Hufeland on the Radix Caincæ, as a new remedy against Dropsy. (*Hufeland's Journal, February* 1826.)—The Materia Medica has acquired a very valuable acquisition in the Radix Caincæ, an important remedy against dropsy. "In a letter from M. von Langsdorf, to Professor Kluge, on the use of the Radix Caincæ, (Chioccocca racemosa, Martii,) we are informed that the root of this plant is celebrated in Minas-Geraes in Brazil, as a very efficacious medicine. Its properties are a drastic, not debilitating, but tonic purge, a good diuretic, and a most active emmenagogue. On account of its pungent and nauseating smell and taste, it often causes vomiting without any emetic principle having been yet discovered in it. In irritation of the nerves, and hysteric cases, this medicine has also been found efficacious; but its principal property is, that the root has been proved to be a radical remedy in dropsy. It is used in the form of an infusion, about two drachms of the root to a pint of boiling water, and allowed to rest over night, and taken in the form of tea once or twice a-day; or to commence with two table spoonfuls, three or four times a-day, of a decoction of two drachms of the root boiled in a pound and a half of water down to eight ounces.

It appears, therefore, that this medicine belongs to that class of anti-hydropic remedies, which, by their resinous drastic qualities, produce alvine evacuations, as well as a secretion of urine, as, for instance, Gamboge, Elaterium, Colocynth, Bryony.

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No. LXXXIX.

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ERRATA.

P. 143, 4th line from the foot, *for* "Dr Hamilton of Lynn Regis"—*read* "Dr Hamilton of Ipswich."

P. 427, transpose the 13th and 14th lines.

NOTICES TO CORRESPONDENTS.

Communications have been received from Drs Evans, Paul, and Renton, and Messrs Fraser, Gunn, James, and Sherwin.

The following Publications have been received :—

A System of Anatomical Plates, accompanied with Descriptions, and Physiological, Pathological, and Surgical Observations. By John Lizars, F. R. S. E. &c. &c. Plates folio, coloured or plain, and Text octavo.
Part X. The Organs of Sense and Viscera of the Thorax and Abdomen, Eight Plates, and 66 pages.
Part XI. Abdominal Viscera, together with the Male and Female Organs of Generation, Seven Plates, and 102 pages.

Part Third of a Series of Elementary Lectures on the Veterinary Art, wherein the Anatomy, Physiology, and Pathology of the Horse are essayed on the general principles of Medical Science. By William Percivall, Member R. C. Surgeons, London. Pp. 502. 8vo, London, 1826.

Observations on the Efficacy of White Mustard Seed in Affections of the Liver, Internal Organs, and Nervous System; and on the General Management of Health and Life. By Charles Turner Cooke, Consulting and Operating Surgeon at Cheltenham. Third Edition, 120 pp. 8vo, Glocester, 1826.

An Essay on the Nature of Pain, with some Considerations on its Principal Varieties as connected with Disease, and Remarks on the Treatment; being the subject of an Inaugural Dissertation delivered at the University of Edinburgh ; now translated, with Additions, by William Griffin, M. D. Member of the Royal College of Surgeons Edinburgh, Licentiate in Midwifery, &c. &c. 36 pp. 8vo, Edinburgh, 1826.

The Edinburgh Journal of Medical Science, No. iii. for July 1826.

The Medico-Chirurgical Review, No. ix. (New Series) for July 1826.

The North American Medical and Surgical Journal; conducted by Hugh L. Hodge, M. D. Franklin Bache, M. D. Charles D. Meigs, M. D. B. H. Coates, M. D. and R. La Roche, M. D. No. i. January; No. iii. July 1826. Published quarterly. Philadelphia. 8vo.

A Treatise on a modified application of Moxa in the treatment of Stiff and Contracted Joints, and also in Chronic Rheumatism, Rheumatic Gout, Lumbago, Sciatica, Indolent Tumours, &c.; with Observations on the different Remedies hitherto employed in the treatment of Diseased Joints; and an Investigation into the Nature, Causes, and Treatment of Spinal Diseases. Second edition. By James Boyle, Surgeon of the Middlesex Infirmary. pp. 220, 8vo, London, 1826.

Additional Observations on the treatment of certain severe forms of Hemorrhoidal Excrescence; illustrated by Cases, &c. &c. By John Kirby, A. B. lately President of the Royal College of Surgeons in Ireland, &c. &c. Dublin. Hodges and Macarthur, 21, College Green. 1825.

Observations sur les Contenus du Canal Digestif chez le Fœtus des Vertebrés. Par le Dr Prevost et M. Aug. Le Royer, Pharmacien. 8vo.

De la Generation chez les Moules des Peintres, (Myæ pictorum.) Par le Dr Prevost. 4to.

Des Maladies Rhumatoides, Memoire communiqué à la Societé Helvetique des Sciences Naturelles seante à Soleure, le 27 Juillet 1825. Par L. A. Gosse, M. D. Geneve, Barbezat et De Larue, Editeurs. Rue de Rhone, No. 177. Paris, Rue des Grands Augustins, No. 18. 1826.

Dissertatio Inaug. sistens Experimenta quædam circa Sanguinis Inflammatorii et sani qualitatem diversam instituta. Georgius Koenig. 4to. Bonnæ, 1824.

Versuch einer Monographie der China; von Heinrich von Bergen, Droguerie-Makler. 348 pp. 4to. with an Atlas of eight coloured Copperplates, and Ten Tables. Hamburgh, 1826.

Reise durch die Schwertz, Italien, Frankreich, Grossbritannien, und Holland, mit besonderer Rücksicht auf Spitäler, Heilmethoden und den ubrigen medicinischen Zustand dieser Länder von Dr C. Otto. In 2 Vols. 8vo. Hamburgh, 1825, pp. 435, and 467.

Parallele der französischen und deutchen Chirurgie; nach Resultaten eines in den Jahren 1821, und 1822, gemachten Reise; von Dr Friedrich August Ammon, practischen Artze zu Dresden, pp. 484, 8vo. Leipzig, 1823.

C. W. Hufeland; kleine medizinische Schriften. 1ter Band, pp. 342. Berlin, 1822. 2ter Band, pp. 438. Berlin, 1823. 3ter Band, 530 pp. Berlin, 1825.

Ueber die Krystallform des einfach arsenik-sauren Natrons, von Leopold Gmelin.

Ueber die zwischen der Rückgratthieren und Panzerthieren überhaupt und den Vogeln und Insekten insbesondere, stattfindende Parallele. Von Ch. L. Nitzsch, Professor in Halle.

Ueber den Wurzelnden und Gift-Sumach als Medizinische, Inaugural Dissertation, von Franz Julius Grüner. 46 pp. 8vo. Prag. 1824.

Bibliotheca Medico-Chirurgica et Pharmaceutico-Chemica; oder derjenigen medizinischen, chirurgischen, pharmaceutischen und chemischen Bücher, welche vom Jahre 1750, bis zum Mitte des Jahres 1825 in Deutchland erschienen sind, herausgegeben von T. C. F. Enslin, 273 pp. 8vo. Berlin, 1826.

Neue Sammlung auserlesener Abhandlungen zum Gebrauch praktischer Aertzte 7ter Band 4ter Stück—8ter Band 1ter Stück. 8vo. Leipzig, 1824—contain Translations of Duncan junior on Diffuse Inflammation; Earl on Chimney Sweeper's Cancer; Hammond on the Destruction of the Brain of a Fœtus; Gregory on Small-pox, and Davis on Phlegmasia Dolens; Duncan on Diffuse Inflammation; Broughton on the use of Cubebs; Wardrop's case of wound of a Nerve of the Thumb; Gilder on the concurrence of Cow-pox and Measles; Duncan's case of Diffuse Inflammation and Circumscribed Emphysema; Duncan's case of Inflammation of the Vena Cephalica.

J. Kant von der Macht der Gemuths durch der blossen Vorsatz seiner krankhaften Gefühle, Meister zu seyn; herausgegeben und mit Anmerkungen versehen von C. W. Hufeland. 70 pp. 8vo. Leipzig, 1824.

Zwolfter Jahresbericht der Königlichen Poliklinischen Institutes der Universtät zu Berlin, umfassend die Jahre 1823, 1824, und 1825. Von Dr E. Osann. 80 pp. 8vo. Berlin, 1826.

Journal der Praktischen Heilkunde; herausgegeben von C. W. Hufeland und E. Osann. Jan. Feb. Marz, April, Mai, 1826. Berlin.

Magazin der ausländischen Literatur der gesammten Heilkunde, und Arbeiten der Aertzlichen-Vereins zu Hamburg; herausgegeben von D. G. H. Gerson und Dr N. H. Julius Jan Feb. Marz, April, Mai, Juni, 1826.

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1. OCTOBER 1826.

PART. I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Practical Observations regarding the Inspection of Recruits for the Army, including some Remarks on Feigned Diseases, being the substance of a Paper transmitted to the Army Medical Department.* By HENRY MARSHALL, Staff-Surgeon.

THE leading qualities required of Recruits may be comprehended under four heads, namely,

Size, including height.
Youth.
Health.
Activity, or the full power of using the several members of the body.

With respect to size and youth they belong to the province of military officers, while the qualities of health and activity are in general left to the determination of the medical branch of the service. Medical officers are, from their professional knowledge and experience of the duties of soldiers, presumed to be capable of forming a tolerably correct opinion of the health of recruits, their power of enduring fatigue, and general efficiency.

The infirmities or defects that disqualify recruits for military service may be divided into three classes:

1st, Obvious defects, chiefly external.
2d, Unobvious defects, chiefly internal.
3d, Feigned defects.

Obvious Defects, chiefly External.

Defects of the first class are frequently dissimulated by recruits, who are often instructed in this species of fraud by the recruiting parties and old soldiers. Every care is required, on the part of a medical officer, to obviate the various means which are adopted to deceive him in the exercise of his duty. *

In the examination of recruits, the following routine will be found to be both expeditious and safe. The names, trades, &c. of the recruits for the day having been inscribed in the register, let them "fall in" and be inspected in their clothes. During this inspection we frequently succeed in detecting men who have previously been in the army, and who have been discharged in consequence of disease or disability.

Let them next be examined singly undressed. Upon entering the inspection room, each recruit is to walk a few times pretty smartly across the apartment for the purpose of ascertaining that he has the perfect use of his inferior extremities.† He is then to be halted, set up, and examined from head to foot. The inspection may be conducted with reference to the following qualities or condition of the body:

Muscular capability.

General health.

The condition of the external surface, comprehending chronic eruptions, marks of punishment, ulcers, cicatrices, &c.

The configuration of the thorax, spine, and pelvis.

The condition of the superior extremities, comprehending symmetry, fractures, contractions, mutilations, &c.

The condition of the inferior extremities, including symmetry, &c. as also varicose veins, nodes, flatness of the soles of the feet, misplaced and supernumerary toes.

Should no material defect be perceived during this survey, the examination may go on. The recruit is then, in imitation of the hospital-serjeant, to perform the following manual evolutions. To stretch out the arms at right angles with the trunk of the body, then touch the shoulders with the fingers, next place the backs of the hands together above the head; in this position let him cough, while, at the same time, the hand is applied to the rings of the external oblique muscles. Examine the spermatic chords and testes, then pass the hand over the bones of the legs. The recruit will next stand upon one foot, and move the ancle joint of the other extremity alternately. Let him then extend the superior extremities forward, for the purpose of having his arms and hands examined; he is in this position to perform flexion and extension of the fingers, and to rotate the fore-arms. The head is next to be examined, including the ears, eyes, mouth, (speech, intellect.) Then ascertain whether he has passed through small-pox, or been vaccinated. The examination of a recruit in this manner will require about five or six minutes.

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* Attempts are sometimes made to impose upon military as well as medical officers. Low stature is dissimulated by glueing pieces of buff to the soles of the feet; and recourse is had to Warren's blacking to dim the brightness of gray hairs.

† This is a very essential part of the business of inspection. Notwithstanding a rigorous observance of it, however, I have known a medical officer called upon to explain why he approved of a recruit, who, after joining the corps to which he belonged, did not perform the "goose step" to the entire satisfaction of his commanding officer.

No recruit ought to be examined while intoxicated; and country recruits should not be inspected the same day they arrive at the depot. The hair should be cut, and the feet washed, before examination. Should it be discovered by his manner, or otherwise, that a recruit had formerly been in the army, he ought to be made to produce his "discharge" or "instructions," by which they may learn the cause of his leaving the service; and if, after he has been approved, it is found out that he labours under some defect, as epilepsy, &c. or, what is much more common, if it is discovered that he was formerly in the service, and discharged on account of some disability, no time should be lost in reporting the circumstance to the proper authorities, that he may be examined and reported upon by a medical board.

The following observations are chiefly intended to point out the objects to which a medical officer should direct his attention in the examination of recruits, without presuming to dictate the result. The question of fitness or unfitness of a recruit must be determined by the discretion and experience of the person who inspects him, for no rules can be framed so as to meet the object intended, namely, to prevent inefficient men from being admitted into the army, and, at the same time, to reject no recruit who does not suffer under some decided disqualification.

Muscular Capability.—Young boys, who have grown rapidly, are sometimes unfit for the service, in consequence of not possessing adequate strength for the performance of military duties. A rapid growth is commonly attended with debility, and is sometimes a precursor of phthisis. But this condition of a recruit is to be distinguished from lean, unfilled-up, half-starved scraggy lads, who make excellent soldiers.

General Health.—Medical officers are seldom called upon to decide in regard to notorious infirmities, but frequently in cases of relative disability from impaired health. The examiner in these cases must be guided in his determination respecting them by his good sense and experience.

External Surface.—The more common eruptions found in examining recruits, are porrigo and blotches, presumed to succeed syphilis.

Marks of Punishment.—The rule to reject recruits on this account is absolute, and I presume it applies to corporal punishment in a general sense, not merely to military flogging.

Ulcers.—Ulcers, buboes, and indeed all ailments that require medical treatment, render a recruit ineligible. Plasters, however small, should be removed from the skin: they are sometimes employed to cover a branded mark of the letter D, (deserter.) I have found cobbler's wax in the orifice of the urethra, where it had been introduced to conceal gonorrhea.

Cicatrices.—Scars on the neck being presumed, in general, to be traces of strumous ulceration, are commonly deemed a disqualifying defect, but whether they should invariably cause a recruit to be rejected, particularly after he has attained the age of manhood, may admit of a doubt. To conceal cicatrices of this kind, recruits frequently bring the chin close to the neck, and sometimes the whiskers and beard are allowed to grow so long as to hide strumous scars.

Cicatrices of frequent venesection, setons, cupping, and numerous blisters, are all objects of attention, being indicative of previous indisposition. We sometimes detect men who have served in India, and who have been discharged from the service on account of ill health, by traces of numerous leech-bites on the body. Scars on the legs, if they adhere to the bone, and particularly if they are surrounded by discoloured and diseased integuments, with a puffiness of the limb, render a recruit ineligible.

Thorax, Spine, and Pelvis.—Perfect symmetry of the human body may be said never to exist. In almost every individual, a want of harmony in some part or other is discoverable. There is often great want of symmetry between the superior and inferior parts of the body.

Thorax.—The formation of this part of the body differs materially in different individuals. In the examination of recruits, we sometimes find the sternum protruded or depressed, accompanied with great physical strength, and apparently a sound constitution; and although a narrow chest is supposed to be associated with the consumptive diathesis, we should not perhaps be warranted in rejecting a man because he has not a full expanded thorax, provided he is unexceptionable in other respects.

Instances occasionally occur, more especially in that variety of configuration of the chest denominated "chicken-breasted," where the lower angles of the scapula are found "projecting like wings," a species of defect which, if it exists in a considerable degree, tends to render the carrying of military accoutrements painful and harassing.

Spine.—The relative proportion of the extent of the natural curvature of the spine, as also the degree of inflexion of the curves, vary much in different individuals. The second, or middle curve in particular, is often found greatly bent in men who possess sound health, and powerful muscular capability.

The spine is frequently found inflected laterally, sometimes in one flexure extending from the loins to the neck, and at other times in two, the spinal column having then a sigmoid shape. When there exists only one flexure, the convexity of which is on the left side, the left shoulder appears to be high, the right hip large, and, if the hands be placed close to the thighs, we can see between the right side and arm, but not between the left side and left arm. This state of the spine may be ascertained by viewing the body in front, as the sternum and linea alba have a curve corresponding with that of the vertebral column. In most cases the lateral flexure of the spine may be ascribed to a shortness of the inferior extremity on the convex side of the curve. This is rendered evident, by placing a body under the extremity on the convex side of the curve equal to the difference of the length of the extremities, when the spinal column will in general become straight. Even in cases where the difference of the length of the limbs is more than an inch, no halt can be discovered in walking, and no defect is commonly perceptible in the muscularity and efficiency of the short extremity. Sometimes the convexity of the curve of the spine is on the right side, and sometimes on the left. Were an individual, whose right or left inferior extremity is shorter than the other, examined without uncovering the lower part of the body, it might be inferred, that the original defect lay in the vertebral column, and that it was the result of disease. From a presumption that lateral inflexions of the spine constituted a disqualifying defect, I have known young, active, and vigorous recruits rejected, although they were admitted to be unexceptionable in every other respect.

Pelvis.—This part of the body is occasionally found to possess a much greater amplitude on one side than on another, varying from one to two inches, without appearing to affect the efficiency of the individual in the slightest degree.

Superior extremities.—More symmetry is commonly found between the lateral sections of the body than between the superior and inferior parts of the system. The right arm is generally thicker than the left, but no superiority in this respect seems to obtain in the right over the left inferior extremity.* Even when the dif-

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* Abstract of the measurement of the arms and legs of 100 recruits, which was made with the view of ascertaining the relative equilibrium of the extremities. The arms were measured about equal distances from the shoulder and the elbow, and the legs round the thickest part.

	Right arm thicker than left.	Left thicker than right.	No difference.	Total.
Right-handed individuals,	68	5	18	91
Left-handed,	1	6	2	9
				100

Of the 68 right-handed individuals whose right arms were thicker than the left, the superior size was in 8 six-eighths of an inch.
2 five-eighths ——
18 four-eighths ——
9 three-eighths ——
30 two-eighths ——
1 one-eighth ——
68

The disproportion of the superior extremities seemed to be fully as remarkable among youths as among persons further advanced in life, and who, of course, had applied themselves longer in the exercise of particular trades.

Fifty-three of the right-handed recruits, whose right arms were thicker than the ference of equilibrium between the arms is considerable, there seems to be no remarkable inferiority of power in the smaller arm, or any want of efficiency of the individual.

Fractures.—Due care should be always taken to ascertain that the long bones are sound, and the functions of the joints unimpaired. Dr Thomas Brown, staff-surgeon, met with a recruit who performed satisfactorily all the evolutions to which recruits are commonly subjected, although he had a disunited fracture of the radius and ulna of the right arm. Fractures, if well united, are not commonly disqualifying defects, although, perhaps, a fractured clavicle should in general render a man ineligible.

Contractions.—A lesion of the functions of the larger joints, as the shoulder or elbow, is an important defect. We frequently, however, find slight contractions of the fingers which do not decidedly disqualify a recruit. Sometimes these contractions arise from injuries of the tendons, but much more frequently from chronic inflammation of the thecæ and aponeurosis of the palm of the hand, excited by the exercise of particular employments, as delving, hammering, ploughing, &c.

Mutilations.—By the French code, a conscript cannot obtain a complete exemption from service on account of the mutilation of any finger but the thumb. According to the existing regulations, a medical officer would probably not think himself warranted in approving of a recruit who had lost any finger. I have known a district surgeon called upon to explain why he approved of a recruit who (according to the report forwarded from the Horse Guards) "had lost the first joint of the middle-finger of the left hand, otherwise good-looking and fit for service."

Inferior extremities.—Frequent instances occur among recruits where one inferior extremity is from ½ to ¾ of an inch thicker than the other, the functions of the smaller limb remaining unimpair-

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left, had not exceeded nineteen years of age, and of this number the difference of equilibrium was as under stated.

In 7	six-eighths of an inch.
2	five-eighths ——
12	four-eighths ——
9	three-eighths ——
23	two-eighths ——
53	

The relative difference in the legs were as follows:

	Right leg thicker.	Left do	No difference.
No. 100.	In 1 six-eighths	In 1 one inch.	28
	2 five-eighths	1 five-eighths	
	9 four-eighths	12 four-eighths	
	3 three-eighths	2 three-eighths	
	17 two-eighths	21 two-eighths	
	3 one-eighth	37	
	35		

In these men there did not appear to be any relation between a superior bulk of the right arm, and a corresponding condition of the right leg, for of the 68 whose right arms had a larger circumference than the left, the right leg was thicker in 25, the left in 29, and no difference was found in 14.

ed. This condition of an extremity is to be carefully distinguished from atrophy, characterized by flabbiness of the muscles, and diminished power.

The deformity denominated *in-kneed*, (whether both extremities be affected, or only one,) if considerable, is a serious defect.

Varicose Veins.—Under this denomination three different conditions of the veins are sometimes confounded.

1*st*, A net-work of superficial blue veins, which is found on several parts of the body, but perhaps more frequently on the inferior extremities than on any other.

2*dly*, A large condition of the veins, but where the functions of the valves continue unimpaired.

3*dly*, A preternaturally dilated state of the veins of the inferior extremities, accompanied with a failure of the functions of the valves, when they assume the appearance of a chain of varicose cysts or bags. The limb whose veins are in this state is commonly somewhat enlarged; the cellular membrane indurated, and much disposed to ulcerate.

The first and second varieties of this affection are of no importance, while the third is a serious defect.

Nodes.—We occasionally find inequalities on the shin-bones, of whose history no satisfactory information can be obtained. As they occur in robust healthy individuals, it may be presumed that they are often merely an anomalous formation, and not the result of disease.

Flatness of the Soles of the Feet.—A failure of the arch of the foot, when it amounts to that degree usually denominated "splay-footed," is a serious blemish. Soldiers with flat feet are unable to endure the fatigue of performing long journies with ease.

Misplaced Toes.—Occasionally we find one or more of the toes of a foot thrown out of their natural direction by a contraction of the flexor tendons and thecæ of the joints, the first and second phalanges being elevated, which causes great irritation and uneasiness in walking, by the pressure of a shoe. When the great toe is incompletely dislocated, and drawn inwards, either under or over the second toe, (constituting the projection vulgarly denominated bunion,) it is an important defect.

Supernumerary Toes.—This is generally a disqualifying fault. Soldiers are often placed in situations where shoes could not be procured suitable for deformed feet.

Hernia.—Three varieties of this defect are occasionally found upon examining recruits, namely ventral, umbilical, and inguinal hernia. The first two are commonly slight, and rarely affect the efficiency of a recruit. Inguinal hernia at once demonstrates the invalidity of a recruit. Disposition to rupture from preternatural enlargement of the ring, or relaxed state of the parietes of the abdomen in the inguinal region, is not unfrequent.

Spermatic Chord.—This process differs considerably in thickness in different individuals, and even in the same person in opposite sides. The veins of this process are sometimes found varicose, a state of parts which may occasionally be discovered at a distance, the side of the scrotum appearing like a bag of worms. It is remarkable that a varicose state of the veins of the chord is almost exclusively found on the left side; indeed, I do not recollect ever seeing an instance of the affection on the right. A medical friend of mine tells me, however, that he has it on the right side. This affection rarely disqualifies a soldier for the performance of his duty. It is sometimes much more evident in the same individual at one time than at another. I know a gentleman who has this affection when his bowels are constipated, and only then. The greater frequency of an affection of the blood-vessels of this chord than the right has not escaped the observation of several medical authors. Morgagni mentions the circumstance. Murray* also notices it, and attributes it to the accumulation of feces in the sigmoid flexure of the colon, which, by pressure on the veins, interrupts the return of the blood by these vessels; but the fact was not established on the broad basis it now is, by the statements contained in the annual returns of recruits inspected at the different recruiting stations in this country.

Testes.—These organs are very small in some individuals. I have found them not larger than horse beans in full grown men. The testicle of one side is sometimes considerably smaller than the other, without being apparently the effect of disease. Not long since a recruit was approved at this depot, and subsequently rejected at the head-quarters of his corps, on account of the state of his left testicle, "which," (according to the report of the surgeon) "appears proceeding to a state of dissolution." Perhaps it may have been a little smaller than the other, no very unusual circumstance. Among the infirmities which occasion absolute or relative incapacity for military service, "the permanent retraction of a testicle" is included in the French code. This phrase, I suppose, simply implies that the testicle is not in the scrotum. In our own "instructions," "deficiency of the testicle," is enumerated among the disqualifying infirmities,—an expression which is perhaps intended to apply to deficiencies by excision. The non-appearance of a testicle is not a conclusive proof that it is wanting. During the examination of about 6000 recruits, I found four persons in whom the right, and three in whom the left, testicle was not apparent, all healthy, vigorous, and manly. *Hydrocele* and *sarcocele* are decidedly disqualifying infirmities.

Cranium.—Severe injuries of the skull commonly render a recruit ineligible for the service. A defect of this nature may be concealed by long hair; hence the propriety of having it cut before examination. Wigs are sometimes employed to conceal fractures of the skull and tinea capitis. I know from experience that it is quite necessary to apply the fingers to the cranium when the hair is long.

Ears.—A recruit is ineligible when he suffers under a defect of the function of hearing, however slight, whether with or without discharge from the external meatus. Some persons are liable to a puriform discharge for a little time, as a concomitant of catarrh, unaccompanied with any functional lesion.

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* Murray de Circocele.

Eyes.—These organs differ in different individuals in the transparency of the cornea, the lustre and mobility of the iris, and the blackness and size of the pupil. In some persons an increase of light seems to have scarcely any influence in altering the size of the pupil. The eyes of the same person are sometimes different, particularly in the size and shape of the pupils, which are occasionally not round, but in some degree oval. Defects in the function of vision commonly arise from a morbid condition of the cornea, iris, lens, or retina.

Cornea.—The defects more commonly found in this part of the eye, are a general haziness and specks, caused by the deposition of lymph, or the cicatrices of ulcers. Opaque specks generally cause a recruit to be rejected at primary examinations; and on this account the service loses a number of active young men.

Iris.—The aperture in this membrane is sometimes closed.

Lens.—An opacity of the lens requires no remark.

Retina.—Amaurosis, or an insensibility of the retina to the influence of light, is commonly indicated by a dilated pupil and immobility of the iris, but these symptoms are not always present in this affection. In some cases of amaurosis affecting one eye, the iris may be made to move by the influence of light upon the other eye, so that a recruit may be approved with a defective eye, although the ordinary degree of care has been taken in his examination.

Nose.—In regard to this organ, it is requisite to ascertain that the nostrils are not obstructed by polypi, and that the Schneiderian membrane is free from disease. The right nostril is sometimes larger than the left, and occasionally the superior turbinated bone of that side projects so as to be easily seen, and has been mistaken by inexperienced examiners for a polypus.*

Mouth.—By the French code, "stinking breath from an incurable cause" disqualifies a conscript, which is a very indefinite cause of rejection. The mouth is examined for the purpose of ascertaining that there are no ulcers in the throat, palate, &c. that the tonsils are not excessively large, and that a great many teeth are not lost. Even in the inspection of this part of the body, we must expect to meet with attempts to deceive. Not long since, a recruit presented himself at this depot with an artificial palate; and I have known one attempt to dissimulate the loss of nearly all the teeth of the lower jaw, by the aid of a dentist. Recruits often endeavour to conceal the "loss of many teeth," by covering the gums with the lips.

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* I may here advert to another anomalous defect, namely, a presumed disease of the cervical vertebræ. When the thyroid cartilage is moved over the bodies of these vertebræ, a grating sensation is commonly produced, a circumstance that has been supposed to indicate disease. I have known this fictitious affection included among the causes for invaliding a soldier. An eminent physician, who was attending a case of fever in a public hospital, happened by accident to touch the thyroid cartilage of his patient, and thereby produced the grating sensation; it was instantly inferred that the bodies of the vertebræ were diseased, and a seton forthwith ordered to be inserted in the fore part of the neck.

Speech.—Indistinct utterance is frequently feigned, but stuttering or hesitation of speech is very difficult to dissimulate. Some stammerers can utter a few short sentences in succession without any well-marked hesitation, so that their defect might escape notice.

Moral Faculties.—To obtain the requisite information on these points, it will in general be necessary to ask a recruit a few short questions, such as what corps he belongs to, what occupation he previously followed, or the amount of wages he usually earned.

2d Class of Infirmities, Unobvious Defects chiefly Internal.

Chronic affection of the Liver.
Nephritic Complaints.
Liability to Rheumatism.
Occasional Hemoptysis.
Incipient Phthisis.
Vertigo.
Frequent Headach.
Dyspepsia.

I have known a number of men discharged from the service in consequence of a real or simulated affection of this nature.

Epilepsy.
Palpitation.

Many recruits during examination feel so agitated from the novelty of their situation, that the motions of the heart become greatly increased. Under such circumstances I have found the pulsations of the large blood-vessels 130 in a minute, while in the same individual, after the agitation had subsided, they were not above 80. The difference between a temporary increased action of the heart, and a permanent irregularity of the function of that organ, is not always so easily discriminated as to warrant a final decision during an examination of two or three minutes. Where any doubt exists, the safest plan is to suspend a determination regarding the fitness or unfitness of a recruit for ten or fifteen minutes, by which a temporary agitation will have become greatly moderated.

Periodic Asthma.
Fatuity, Imbecility.

Some men labour under such a debility or obtuseness of the mental faculties that no art can make soldiers of them; and yet their replies, conversation, and countenance will evince no want of comprehension. A single examination will not always be sufficient to detect practical idiots of this kind. They are, however, commonly soon discovered in a barrack-room among their comrades.

Short-Sightedness.
Night-Blindness.
Confusion of Vision, (false sight.)
Stricture of Œsophagus.

Stone in the Bladder.
Stricture of the Urethra.
Frequent retention of Urine.
Incontinence of Urine.
Catarrhus Vesicæ.
Occasional prolapsus Ani.

To the above list, a number of other defects of a similar nature might be added. Many of these infirmities possess no permanent external mark of their existence, and consequently may be dissimulated during the short period a recruit is under examination. According to the French *Code de la Conscription,* every conscript is presumed to be fit for service; and when one claims an exemption on account of bodily infirmity, he is directed to apply to the municipal administration where he is examined, and if the appeal be considered without due foundation, he is directed to join the army instantly. In unobvious infirmities, the testimony of ten individuals, not relations of the appellant, are required to be produced, affirming the existence of these defects. The ultimate decision of some cases is suspended "from quarter to quarter." With a little modification the French system would apply very well to men who were ballotted for the militia, and who conceived they laboured under some permanent infirmity which incapacitated them for military service.

3dly, Feigned Defects.

The simulation of infirmities is much practised by recruits, a species of fraud which is by no means confined to young soldiers. Recruits rarely enlist in consequence of a deliberate preference of a military life, but commonly on account of some domestic broil, or from a boyish fancy, sometimes from want of work and its immediate result—great indigence. Perhaps nine-tenths of the recruits regret the measure they have taken after leaving home, and are willing to practise any fraud, or adopt any means which promises to restore them to their liberty, and the society of their former acquaintance. This disposition is very prevalent among the recruits raised in the country who are brought to Dublin for examination, and subsequently to be transferred to their respective corps. Some excite ulcers, others affect *stammering, deformity, pain in various parts of the body, deafness, blindness, epilepsy, contractions of the fingers, lameness,* &c. We sometimes meet with individuals who refuse to move an arm or leg, and assert that they have lost the power of motion in the limb. It is hardly necessary to observe, that the country recruits have all, previously to examination in Dublin, sworn that they were not "troubled with fits, and no ways disabled by lameness, deafness, or otherwise." To obviate this disposition to fraud, a medical officer is under the necessity of presuming that a recruit is free from a disabling infirmity, when no sensible appearance proves its existence, whatever assertions may be made to the contrary. In general, the irksomeness of a military life wears off, and young soldiers become less anxious to revisit their relations. Until, however, they have acquired a perfect knowledge of their duty, and become familiarized in a corps, their attachment to the service cannot be great, and should not be calculated upon. Many recruits, who, in consequence of disgust with the service during the period of hard drill, have evinced a disposition to simulate ailments, or to aggravate trifling defects, have, from mild and humane treatment, been converted into excellent soldiers.

Feigned infirmities are generally referable to three heads or classes, namely, Pretended, Simulated, and Excited Disabilities. Excited diseases are, for the most part, external, although not always so. Diseases are feigned for a variety of purposes, and the character of the assumed disability is calculated to suit the occasion. If a soldier wishes to escape or delay punishment, to evade duty of any kind, more especially that of embarking for foreign service, he simulates an acute disease. If, however, his design be to obtain a discharge with or without a pension, he feigns an infirmity of another class, one which possesses a chronic incurable character, calculated, if possible, to excite commiseration and pity.

The veracity of the testimony of a soldier may be suspected when he affects an obscure disease; if it be discovered that he dislikes a particular duty to which he is liable, or that he is disgusted with the service, as also when the supervention of disease is not after the usual manner; when he has an aversion to take his medicine, or evinces an excessive anxiety to adopt some means of recovery; when incompatible symptoms occur, and the progress of the disease is not according to the ordinary course; and when medicines are reported not to be followed by their usual effects.

It is difficult to conceive a more irksome and unsatisfactory duty than to have the care of a number of soldiers who complain of uneasy sensations without any external mark of disease, or visible disorder of the functions, and where testimony is liable to suspicion. Under such circumstances it is not always easy to preserve a just medium between too much incredulity and too great confidence in an opposite opinion. I know well that it is often much more difficult to ascertain whether or not a disease really exists than to prescribe an appropriate remedy. In a regimental hospital, which is by far the best school for a young medical officer, the practice of simulating diseases can rarely be carried to any great extent where due care is exercised; but in general hospitals it is impossible to prevent much fraud of this kind; and although a medical officer may have strong presumptive evidence in many cases that no material disease exists, it is but seldom that he can demonstrate the imposition. The greatest discretion is at all times required where presumption or probability, the only evidence afforded by medical science, points one way, and testimony another. In doubtful cases we are frequently liable either to deceive ourselves or to be deceived.' For the most part, nothing but the closest observation, constant and long-continued watching, favoured by concurring circumstances, are likely to be successful in detecting imposition. The natural abhorrence of fraud, and the eclat which is supposed to attend the detection of an impostor, may induce persons to adopt violent means, a measure that I believe ought rarely, if ever, to be attempted; they are commonly ineffectual, highly impolitic, illegal, and lead to unsatisfactory results. If a suspected patient possess sufficient fortitude to support a severe trial, the medical officer who superintended it is regarded with indignation, while the simulator is considered by his comrades as a martyr. Every unsuccessful attempt makes him more determined to persist in his plan of imposition. Mild but firm measures are perhaps more successful than violent means of detection; they certainly induce a greater number of simulators to return to their duty. With the former we may retrace our steps if we form an erroneous diagnosis, which we cannot always do with the latter.

When we suspect disease is pretended or simulated, it is commonly prudent to seem to believe every word the patient says,—in fact to endeavour to obviate fraud by fraud. Under the appearance of being much interested in his case, we have an opportunity of watching his measures narrowly, and by encouraging him to give occasionally an account of the origin and progress of his complaint; fraud will probably be detected if it exists, either by his contradicting himself, or by an enumeration of incompatible symptoms. By pretending to believe that the disease of a simulator is very serious, a pretext is afforded of making him undergo considerable privations, as well as some uneasiness, with the professed intention of adopting an effectual means of cure,—for the word punishment ought to be carefully avoided. A recruit, having become tired of a military life, wished to obtain his discharge, and, in furtherance of that end, pretended he had a severe pain in his left side, at the same time stating that he had "liver." Seeming to believe that this disease was of a grave nature, the recruit was confined to bed, and accommodated in a ward by himself, lest his sleep might be disturbed by the conversation of his comrades. He was kept on very reduced diet, and a solution of *Antim. Tart.* alternately with the *mistura diabolica* regularly exhibited. Under this discipline he held out for a month, and then recovered rapidly. Some time after he confessed the fraud, and swore if it had not been for his stupidity in locating the pain in his left side, the imposition would never have been discovered. But often after we have satisfied ourselves that, in all probability, an infirmity is chiefly feigned, no useful result is obtained; to render our attempts to detect fraud completely effectual, the impostor must be convicted. Although the means commonly employed to expose and convict simulators not unfrequently fail, an account of some of the artifices occasionally practised by soldiers to feign disease, or disability, may be useful to young medical officers, inasmuch as it will put them on their guard not to implicitly rely upon testimony, and excite them to scrupulously and patiently examine less doubtful evidence, the operations of the various functions of the body. An intimate knowledge of the duties, habits, good and bad qualities of soldiers, will contribute considerably to prevent us from being misled by their attempts to deceive; but this is a species of information which can be acquired only by living among them, more particularly by being on board ship with them. Some medical officers are much more dexterous in detecting the simulators of disease than others. To this circumstance may, in an especial manner, be attributed the reason why some regiments have always a number of malingerers, while others have none, or scarcely any. Soldiers soon form an opinion of the ability of their medical attendant in this respect, and seldom attempt to deceive unless they think their artifice will succeed. This tact does not depend upon severity, for the most efficient surgeon will often doubt, without appearing to be suspicious, and seem to be the dupe of a schemer that he may become his master. As an instance of the inefficacy of violent means, I may adduce the case of a man belonging to the 15th regiment, who is at present a patient in the general military hospital of this city. This man is a lawyer by profession. For some time he attempted to obtain his discharge by endeavouring to establish some illegality in the mode of his attestation. This attempt having failed, his next measures were to complain of pain in the loins, and uneasiness in the right inguinal region. The medical officers of the corps were not convinced that any disease existed, and as he refused to perform his duty, he was tried by a Court Martial, and sentenced to receive three hundred lashes, which were inflicted in the usual manner. He still, however, continues to assert that he has pains in his loins, and declines doing his duty. In all probability he will have to be discharged, although there is no trace of deranged function, and no evidence of pain but his own assertion. Accident has sometimes convicted a simulator after every attempt to detect him had been abandoned. A recruit of the 7th Dragoon Guards insisted that he was unable for drill, in consequence of pain in his right side, which was so severe as to prevent him moving without greatly aggravating the uneasiness. He had exhausted all the resources of medicine without admitting that he had received any benefit. While the other recruits were practising the sword exercise, and indeed at all drills on foot, he was obliged to appear properly dressed in the rear of the squad. One day after drill the men were directed to practise leaping over a rope. While they were thus employed, the adjutant said to the recruit in question, now C——— if you will jump over that line, I will give you a shilling. C——— forgot his assumed defect, he cleared the rope, and stood convicted. He became a very good dragoon.

That variety of fraud, where a slight degree of disease or disability exists, but which is aggravated by simulation, is infinitely more difficult of detection than when the defect is wholly pretended, and involved cases of this kind occur much oftener than those that are uncomplicated. To estimate how much real disease is actually present, and how much of the assumed disability is merely pretended, is frequently no easy task. The period when a soldier, whose case is somewhat doubtful, should be recommended to be discharged, is another very important point. Where a man is advanced in life, and therefore not likely to pass into the service again, his discharge is comparatively not of great moment, as far as he is himself concerned; but if he be young, it is bad policy to relieve him from his engagement, unless the evidence of the existence of real disease be highly probable. In cases of chronic headach, epilepsy, &c. we can in general prevent them from re-entering the service, by introducing a seton into the neck, and allowing it to remain for some time, so as to occasion a discernible cicatrix.

Intermittent Fever.—To evade duty, or to obtain a removal to a more desirable station, this disease is occasionally pretended in countries where endemic fever prevails, and the fraud is not always confined to the non-commissioned officers and soldiers of a corps. The impostors commonly state that the paroxysm supervenes during night, and the symptoms intermit as the morning approaches. This variety of fever rarely comes on after 8 o'clock P. M., I consequently used to desire all suspicious cases that came under my care to call me on the approach of a paroxysm, at whatever hour of the night that might happen. The measure was remarkably successful. A paroxysm of intermittent fever is sometimes simulated.

Continued Fever.—A condition of the system simulating fever is sometimes artificially produced, and the means employed are various. Swallowing a small quantity of tobacco quickens the pulse, and produces an appearance of general indisposition; a similar effect is excited by introducing it into the anus. Flower or chalk is employed to whiten the tongue; I saw a case of this kind at Fort Pitt where the tongue was brown and dry; the line of demarcation between the exsiccated part, and the clean healthy margin of the tongue, was too well-marked to escape observation. The means employed to brown the tongue I did not discover. The simulation of fever, in this instance, was practised apparently with the view of evading embarkation for India, but the scheme did not succeed.

Inflammation of the Eyes.—This disease is occasionally excited by the application of a variety of acrid and corrosive substances, as the muriate of mercury, lime, &c. I once detected a patient in hospital for ophthalmia, with a small portion of black muslin spread over the cornea of the right eye. This man was completely blind of the left eye, probably the result of artificially excited inflammation.

The hairs of the ciliæ are sometimes extracted, and caustic applied to the place whence they were withdrawn, for the purpose of exciting disease of the palpebræ.

Opaque Cornea.—This has been effectually and suddenly produced by the application of nitric acid, more or less diluted, to the eye. It is said the result of this application sometimes simulates cataract. A strong acid directly applied to the cornea suddenly occasions a slough, which sometimes destroys the coats of the eye. Not long ago a case happened in the General Military Hospital of this city, where a sloughing ulcer on the cornea supervened in the course of a few hours; the soldier was supposed to have excited the disease by means of an acid or some other very acrid substance. When acrid powders, as lime, are employed to excite inflammation of the eye, an ulcer or slough situated between the inferior palpebra and the globe of the eye is a frequent consequence.

Amaurosis.—Blindness without an apparent cause is not an unfrequent disease in military hospitals, and there is sometimes reason to infer that the loss of vision is only pretended. A dilated pupil and inactive iris, symptoms that commonly characterize this affection, are simulated by the application of the extract of belladonna, or henbane, to the skin round the eye, and many individuals among the conscripts in France succeeded, by these means, in being declared amaurotic. I have known dilated pupils and blindness temporarily produced by a small portion of the leaf of the *Datura Metel,* which was mixed with a man's food. In the instance to which I allude, the drug was nefariously exhibited for the purpose of depriving the man of his property, a design which unfortunately succeeded.

District surgeons are frequently much employed in examining the cases of individuals who are, or have been, in the army or navy; and who claim pecuniary remuneration on account of injuries received on service. This is commonly an important, sometimes a difficult, duty, and in no specific defect is the difficulty greater than when loss of vision is averred, without any material objective symptom to corroborate the testimony of a claimant. Fraud, we know, is frequently attempted, and consequently we should be on our guard to obviate it as much as possible; but while due care is taken to prevent imposition, the rights of individuals ought to be rigorously respected, to neglect which, would be both inhumane and unjust.

Short-sight.—This defect used to be frequently simulated in France during the rigorous execution of the conscript laws. The fraud may in general be detected, or the real existence of the disease ascertained, by presenting a person with an open book, and placing the leaves close to the nose. But it is said the power of vision may be greatly impaired by wearing convex glasses, and, with this view they were much employed.

Strabismus.—Squinting is sometimes simulated, and from the custom of practising it often a habit is produced, and the defect becomes permanent. This affection should rarely, if ever, cause a recruit to be considered unfit for the service; it does not incapacitate for the practice of trades in which the faculty of vision is particularly required, as watchmakers, &c.

Loss of many Teeth.—This disqualifying defect has been occasioned by extracting the teeth in the hope of thereby escaping military service. With a similar view, the teeth have been filed down to the gums, so that it became necessary during examination to pass the finger along the jaw, previously to granting an exemption from service on account of loss of teeth.

Inflammation of the Liver.—I have known hepatitis occasionally affected for the purpose of obtaining a sick certificate. In some cases of this kind which came under my own care, the individuals submitted to the treatment indicated by the account they gave of their own feelings, such as venesection, repeated blistering, the exhibition of mercury so as to excite ptyalism, confinement to bed, &c. While the expressions of uneasiness were urgent, I declined giving a certificate, avowedly in consequence of their being unable to bear the fatigue of travelling; and when the pain became considerably meliorated, an application for permission to leave the station was met by stating, that I entertained a hope that change of climate would not be essentially necessary for the restoration of their health. Where officers are concerned it is more especially necessary to seem to be deceived in doubtful diseases, and I believe the design of the impostor is more effectually obviated thereby, than by assuming suspicion for proof, and acting precipitately upon this assumption.

Chronic Disease of the Liver.—This affection is not unfrequently pretended, and as the real disease is often not characterized by well-marked symptoms, the fraud is difficult of detection. About the year 1808, an officer, who had been appointed to a regiment serving abroad, applied to the surgeon of the corps to which he had lately belonged for a certificate, attesting that he had laboured under an affection of the liver, and that a hot climate was unsuitable for his constitution. The surgeon declined certifying to either of these points. Not discouraged by this refusal he proceeded to London, and acted his part so well before the medical board, that he obtained leave of absence for several years on account of liver disease, during which period he conducted himself like a person in health. He had devoted some attention to the simulation of hepatic affections, and acquired the art of occasioning a fulness in the right hypochondrium when placed in a horizontal position, and of expelling a portion of the contents of the stomach when it suited his purpose. This officer resided for some time at the Northumberland Coffee-House, where he gave lessons to military officers on the science of simulating disease, of which he had become an adept.

Spitting of Blood is an indication of disease not unfrequently simulated. The means employed for this purpose are various; some secrete bullock's blood for the purpose of colouring the saliva; others make small incisions on the inside of the mouth. Bole armoniac and paint composed of vermilion have also been used.

Vomiting of Blood.—This affection is simulated by first swallowing blood, and subsequently ejecting it.

Bloody Urine is occasionally pretended, and the affection rendered plausible by mixing blood with the urine; hence the propriety of seeing a suspected person make use of the urinal. Another mode of deceiving is to inject blood into the bladder.

Hæmorrhoids.—The bladders of rats or small fish, partly introduced into the rectum, resemble piles so much as to have deceived superficial observers.

Consumption.—Individuals with long necks and contracted shoulders have successfully simulated phthisis by covering the chest with blisters, cicatrices of issues, &c., aided by the temporary exhibition of drugs that occasion paleness of the countenance. The motive for feigning consumption, and a number of other infirmities of this catalogue, is to escape military service in cases of ballot.

Diarrhœa, Dysentery.—Bowel complaints are occasionally pretended by recruits when they wish to avoid leaving Dublin to join their corps. The fraud is commonly easily detected by inspecting their linen; if it be clean, we may infer that the bowels are not much out of order. In countries where dysentery is prevalent, as in India, bowel complaints are often pretended as a pretext for evading duty. To obviate this source of imposition, every suspected case should be furnished with a close stool for his own use, and the evacuations inspected. Care must be taken, however, that a patient really suffering under this disease should not lend his aid to promote the fraud. But we learn from Mr Hutchison, that bowel complaints were excited in the naval hospitals for the purpose of invaliding. The means employed was a mixture of vinegar and burnt cork, by which some fine young men destroyed themselves. He likewise informs us that a solution of the sulphate of iron is sometimes used for a similar purpose by convicts who are employed as shoemakers; they swallow the fluid furnished them to blacken the leather.

Anomalous Pains in different parts of the Body.—The simulation of this class of infirmities is frequent, and the detection of the imposition is often difficult. The non-existence of uneasiness cannot be proved, and all must admit that a considerable degree of pain may be present without a well-marked change in the external appearance. The imposition is perhaps more frequently discovered by the inconsistencies and contradictions a patient makes in the history of his complaint than by diagnostic symptoms. In some suspected cases, I have known a regular exhibition of the *mistura diabolica* followed by gradual and complete recovery. Where this means has failed, the following plan may be tried. To address the patient formally before his comrades, and to tell him that every care had been taken to comprehend the nature of his complaint, which is not recognisable by external symptoms, and to apply the proper remedies for his recovery without success, that, as he still complained of severe pain, it would be necessary to reduce his diet for fear of aggravating the uneasiness, and that, for the future, it was intended in his case to trust to the beneficial influence of low diet, confinement to bed, and time. To follow up this measure, the surgeon should, in his visits to the sick, pass this man's bed without noticing him. The distant prospect of success, and the scorn of his comrades, induce many an impostor to give in, who is treated in this manner. Some simulators have, however, a degree of fortitude which resists every means of conviction, and medical officers are occasionally induced to sanction the discharge of suspicious cases, rather in consequence of exhausted patience, than from an undoubted belief that a real source of infirmity exists. Under the evasive term chronic rheumatism, numerous instances of fraud are constantly occurring. Dr Peile, deputy-inspector of hospitals, had, sometime ago, a negro soldier under his care, on account of chronic rheumatism, with contracted joints, who excited the greatest compassion and pity. He never moved without uttering violent expressions of excruciating suffering. Every remedial means which promised either to relieve or cure him were employed without success. At last he was discharged as incurable, and four days after this event took place, Dr Peile saw him actively pursuing the avocation of a lamplighter. This man performed his part so dexterously, that the veracity of his testimony was never doubted. It ought ever to be borne in mind, that, to allow a number of impostors to escape with impunity, is a much less evil than to unjustly punish a single innocent individual.

The extent to which government is defrauded by the simulators of disabilities is greater than could be supposed, except by persons in particular situations, who become acquainted with their tricks. There is just now a man at this depot, who belonged to the 13th Light Dragoons for about a year and a half, without doing a day's duty. He was discharged last month in consequence of chronic pains of the limbs and deafness. After spending a week with his friends in Dublin, he enlisted into the East India Company's Service, to which he now belongs. He is a perfect picture of health and strength, and possesses most completely the sense of hearing. What variety of disability he may feign next it is difficult to conjecture.

Palsy.—The partial loss of the power of an extremity is sometimes simulated, and the fraud is not always easily detected. When the limb is apparently sound, and neither unusually soft, nor materially extenuated, Baron Percy recommends a trial to be made of the actual cautery. If the affection be real, this treatment may be advantageous; and although simulators often evince considerable fortitude, they have, for the most part, great reluctance to the application of caloric in this manner.

Stammering.—Simulators of this defect commonly state that it is congenital, but the more artful ascribe it to a fit of apoplexy, or a severe fever. Where the organs of speech were perfect, and the moral evidence of the previous existence of the infirmity not satisfactory, the French authorities used to confine such cases, and did not supply them with food until they called for it without any hesitation of speech.

Lameness.—This infirmity is easily simulated, but no inconsiderable degree of courage is required to brave the means usually adopted to relieve the disability, if real, or to exhaust the fortitude of an impostor. Some individuals after a slight fall or bruise, real or pretended, complain of lameness and want of power to use the inferior extremities, and persist for years to assert their inability to perform any duty. Lameness is very commonly feigned by recruits who have been approved in the country, and who wish to be found unfit for the service in Dublin. The best means I know to obviate this defect in doubtful cases, is to recommend active exercise, and when a patient professes his inability to move quickly, he is to be assisted by a fatigue party, two of which are to take hold of his hands, and move rapidly along the parade ground with him: when the individuals of one party are tired, they should be relieved by another, and this exercise is to be continued as long as the surgeon may deem proper. Few simulators of lameness have fortitude to endure this species of medical discipline for a great length of time.

It is surprising how long a limb may be kept in a constrained position or inactive state without much diminution of muscular power. Two cases happened some time ago in this city, strikingly illustrative of this circumstance. A soldier asserted that he had nearly lost all power over the inferior extremities, in consequence, as he stated, of a hurt he received on the loins. Active means were employed, and as he was from the commencement suspected of being an impostor, the measures were long continued. The patience of the medical officer who attended him was at last exhausted, and he was eventually recommended to be discharged. The day he was to receive his discharge, he crawled on two crutches to the office where it was to be given him. Having obtained this document, he begged the porter of the establishment to read it, which he did twice aloud. After satisfying himself that the discharge was properly made out, he first deliberately threw away one crutch, then another, and darted forward in the square, overturning two men who happened to be before him, and finally disappeared, springing over a car which stood in his way, with a water cask on it. During the late war, a man belonging to the Cavan Militia was, in consequence of weakness of the inferior extremities, kept in the Regimental and General Hospital of this city for two or three years, and almost the whole of this period he never moved without crutches. He was at last discharged. The day after he received his balance of pay, he limped to the Phœnix Park, where the Cavan Militia was at exercise. Upon approaching the corps he laid aside his crutches and advanced in front of the line; he then bounded like a deer, from right to left, and from left to right of the regiment, to the no small surprise of his old acquaintances.

Vomiting.—Some persons possess the power of expelling the contents of the stomach by means of pressure on the abdomen, and others by swallowing air. I had a man under my care in Fort Pitt Hospital, who was suddenly affected with a propensity to eject his food shortly after he learned that he was soon to embark for India. From the first I had no doubt that the affection was voluntarily excited. He was told that, as his complaint was very unusual, we had consulted upon his case, and come to the conclusion, that, in the event of his disposition to vomit not abating, his belly was to be opened for the purpose of ascertaining the cause of the regurgitation of his food. The urgency of the symptoms, of which he had formerly complained much, subsided rapidly, and he embarked without an expression of uneasiness in forty-eight hours.

Epilepsy.—This disease is not unfrequently pretended by recruits at secondary examinations. One mode of attempting to deceive is to appear at the inspection-room with a *Gospel* suspended round the neck, which spell or charm is commonly alleged to be worn for the purpose of preventing a paroxysm of the "blessed sickness," (epilepsy,) a disease to which he has been long liable. Sometimes the relations of a recruit wait upon the district surgeon, and inform him that the young soldier is frequently subject to falling sickness, or labours under some other incurable complaint. These statements pass of course unheeded, although they may be true, a liability to epilepsy not being characterized by external marks so that it can be recognised. Dumas, in a work on Chronic Diseases, states, that, in constitutional epileptics, the facial angle is always under 80, and recedes from that to 70. The science of mathematics has hitherto done but little in contributing to a correct diagnosis of disease, and perhaps as little in epilepsy as in any other. It may be observed that real epileptics are unwilling to speak of their complaint; and, if the subject be forced upon them, they are apt to give the symptoms a different name, by which means they attempt to deceive others, and are perhaps deceived themselves. Both young and old soldiers sometimes simulate a paroxysm of this disease, apparently for the purpose of being discharged; and it is of some importance to be able to distinguish a real from a feigned attack. When narrowly watched, I believe, it will be found, that the contortions of simulators resemble grimaces rather than the powerful involuntary muscular contractions which characterize the true disease. During a real paroxysm of epilepsy, sensation seems to be totally abolished; hence, if any evidence of feeling can be excited by stimulants, it may be inferred that the disease is feigned. The agents commonly employed for this purpose are various, but chiefly two, the access of a strong light to the eye, and the application of the vapour of hartshorn to the nose. The first of these tests is not satisfactory, for neither in a real nor in a simulated paroxysm are we commonly able to employ it so as to resolve our doubts on account of the struggles of the patient; but besides this impediment there is a remarkable variety in the mobility of the irides of different individuals in health, some being scarcely affected by an increase of light, and others very much. The result of the application of the second is also inconclusive, for individuals are not invariably much affected by inhaling the vapour of hartshorn. Blowing Scotch snuff up the nostrils with a quill is said to be an effectual means of rousing suppressed sensation. In more than one instance I have succeeded in abruptly terminating an apparent epileptic paroxysm by dipping the end of a flannel bandage rolled up, in boiling water, and then applying it to the side of the patient. As the usual recurrence of the paroxysm in these cases was arrested, it may be presumed the disease was feigned. The flannel bandage, applied in the above manner, is a convenient mode of suddenly exciting vesication. Should doubts remain after the application of the milder tests, the actual cautery may be proposed in the hearing of the patient, and, if deemed necessary, exhibited, or even applied to the back of the neck. In doubtful paroxysms of this disease, I have heard it recommended to drop a minim of the oil of turpentine into the eye: To rouse from comatose and faintish states of the system, the natives of India put a little of the expressed juice of a pod of Cayenne pepper into one of the eyes. Various other means of exciting evidence of sensation have been recommended, such as introducing a tube into the nostrils, pricking the person with a pointed instrument, applying strong pressure on the præcordia, so as to interrupt the function of respiration, &c. The fortitude evinced by some simulators of epilepsy is almost beyond credence. Instances are on record where the actual cautery has been endured without wincing. To prevent being imposed upon by simulators of this disease, requires in some cases both great attention and much experience.

Palpitation.—Both external and internal means have been employed to excite this affection. By means of tight ligatures round the neck and upper part of the arms, the circulation has been greatly disturbed, and the intention of simulators nearly effected.

Palpitation of the heart became epidemic among the men of the Marine Artillery in 1821 or 1822, and, if I am rightly informed, it was very prevalent in a regiment of the line about the same time, whereby a number of men were invalided. Dr Quarrier, surgeon to the Marine Artillery, informed me, that when the affection appeared in this corps, it was for a considerable time attributed to hard drill at the great guns, and subsequent exposure to currents of cold air. In the course of time, however, the epidemic extended to some of the seamen, who were accommodated in the same hospital (Haslar) with the marines. Suspicions were eventually entertained that the affection was artificially excited, and many unsuccessful attempts made to ascertain the nature of the means employed. The secret was at last discovered by the confession of a man who had himself excited disease, and consequent irregularity of the heart; and the drug employed was found to be the powder of white hellebore. The ordinary dose was about 10 or 12 grains, or as much as could be raised upon sixpence, which was repeated so as to occasion general indisposition, and an undue action of the heart. Large, or frequently repeated moderate doses occasioned distressing headach, nausea, vomiting, and sometimes violent purging. In some instances abdominal pulsation was the chief symptom of disease. One man died in consequence of the poisonous influence of the hellebore. The practice of thus exciting disease was introduced into the corps by a private that had formerly been servant to a veterinary surgeon, who employed him to compound medicines for his patients. This man used to furnish his comrades with a dose of hellebore for 3d. or 4d.; but if he discovered the name of the drug, so as to enable an individual to purchase it at a druggist's, he charged 3s. 6d. The epidemic ceased both among the marines and seamen, soon after the exciting cause of the affection was discovered; but before that event a number of persons were discharged on account of disordered circulation, some of which were afterwards found efficient soldiers in other corps.

In November 1823 there were three suspicious cases of this affection in Fort Pitt Hospital, belonging to the 13th Regiment. They were stripped naked, and removed to a ward where they were carefully secluded from external communication. After the lapse of a period of about six or seven days, they applied to be permitted to return to their duty, and, upon investigation, all undue action of the heart had ceased.

Mental Alienation.—We are informed, by high authority on this subject, that no disease is more easily feigned than insanity, or more difficult of detection. Mental alienation is, I believe, not frequently feigned in the army, but individuals who become really afflicted with this disease are often suspected of being impostors. Recruits, in particular, are almost invariably presumed for some time to be deceiving when insanity supervenes. Dr Hennen tells us that a feigned maniac never willingly looks his examinator in the face. This test is, however, not very conclusive, inasmuch as we know that lunatics regard those under whose control they have been placed, or whom they fear, with a subdued air—a cast of countenance which may be confounded with the reluctant manner of a simulator. When the eye of an insane person "meets that which has so often checked his vacillatory emotions, the instant of such a meeting, is the instant of self-correction, of silence, or of sudden order, and surprising self-possession."—(Hill.) Few, if any, pretenders to mania are able to simulate the watchfulness which commonly attends a state of insanity. A medical officer can never exercise too much caution in giving an opinion upon doubtful cases of mental disorder, more especially when that opinion may involve a breach of discipline and consequent punishment. I recollect two non-commissioned officers becoming permanently insane upon being confined in consequence of a charge of misconduct. In these cases the probability of the affection being feigned was very strong, and if an opinion had been given in the affirmative, it is possible they might have been both punished. That mistakes of this kind may happen is evident by the report of a coroner's inquest held on the body of Joseph Godfrey, as given in the Times newspaper 22d February 1826. It appears Godfrey belonged to the 83d regiment, and served with that corps at the Cape of Good Hope eleven years. During this period he exhibited symptoms of derangement five different times, on each of which occasions he was tried by a Court-Martial for pretending madness, in the hope of getting his discharge, and sentenced to be flogged, which sentence was successively carried into effect. Maniacal paroxysms continued to recur after he was discharged, and during one of the accessions, he committed suicide by drinking a quantity of sulphuric acid. In some instances it would appear to be very difficult to distinguish feigned from real insanity. The case of a recruit came lately under my notice, where, after a probation in hospital of seven weeks, he was discharged upon the presumption that mental alienation to a certain degree did exist. While measures were in progress for his discharge, which occupied only a few days, the symptoms of deranged intellect became less apparent, and by the time liberation took place his mind was perfectly tranquil and his conduct rational. Such a change from real disease might no doubt take place; but the impression which remains on the mind of his medical attendant is, that the symptoms of aberration were simulated. Every measure that suspicion of the intentions of the patient, and experience on the part of the medical officer could dictate, were tried to obviate fraud in this case. He succeeded apparently from carefully avoiding to overact the part he assumed. He neglected his food for a considerable time, he simulated an unusual forbearance of sleep, and he avoided society.

Hydrocele.—A tumefaction resembling this disease is produced by puncturing the skin of the scrotum, and inflating the cellular membrane. This is the plan commonly employed by persons who imitate this affection. Not long since a paper describing the operation of inflating the scrotum was found in possession of a deserter confined in the provost-guard of this garrison. He paid 2s. 6d. for the secret.

Tumid Abdomen simulating Visceral Disease.—A person, who had the extraordinary power of greatly distending his belly by swallowing air, availed himself of this faculty to deceive a board of French medical officers, and thereby succeeded in obtaining an unqualified exemption from military service. Physconia is sometimes simulated in India, particularly by convalescents who are sent from stations in the interior to the coast, for the recovery of their health, or transmission to Europe, should such a measure be found necessary. I am not intimately acquainted with the means employed, but if my information be correct, it consists in swallowing large quantities of Congée-toddy, and a little soap, a short period before they are to be inspected. The squalid exanguine countenance, shrunk and inelastic muscles of persons who have resided for a considerable time in India, strongly corroborate the conclusion likely to be drawn from a protuberant belly, in a convalescent from tropical disease.

Swelling of the Legs.—This affection is sometimes excited by ligatures round the thighs. In all doubtful cases, the lower extremities at least should be completely uncovered. I have reason to think the ligature is sometimes adopted for the purpose of aggravating, if not of occasioning, varicose veins of the legs. Not long ago, a recruit was brought before a medical board in consequence of having been considered ineligible for the service, on account of slight varices of the leg. About ten minutes before the board assembled, it was discovered he had a tight ligature round the limb immediately above the turgid plexus of veins.

Scrofula.—To simulate traces of scrofulous disease of the neck, ulcers are sometimes excited below the angles of the jaw; and for the purpose of rendering submaxillary cicatrices more effectual, the French conscripts used to apply the juice of euphorbium or pounded garlic over the upper lip and nose a few hours previous to examination.

Cachexia and Debility.—An ill-conditioned habit of the body, and great weakness, is occasionally simulated for various purposes, such as to procure leave of absence from foreign stations; and, to corroborate verbal testimony, substances are swallowed to make the face pale. I have known a person in ordinary health succeed in a manœuvre of this kind, by indulging freely in wine, and depriving himself of sleep for two or three nights previously to his being examined by a medical board. His disordered attire, unshaven chin, hollow eye, depressed jaw, pale and contracted countenance, so changed his usual appearance, that he was scarcely recognisable by his acquaintances. We have all seen very rapid recoveries occur after the signing of a sick certificate.

A medical gentleman of my acquaintance was proffered a considerable fee by an officer, if he would prescribe a drug for the purpose of occasioning a pale sickly aspect, as a preliminary measure to his appearing at the medical board, Dublin, to obtain a prolongation of leave of absence. He was very properly desired to withdraw without delay.

Scurvy.—This affection is simulated by covering the teeth with wax, and then applying acrid corrosive substances to the gums.

Cutaneous Affections.—Some conscripts in France having accidentally discovered that certain articles of diet excited an efflorescence or eruption on the skin, successfully availed themselves of this gastric sympathy, and pretended the temporary cuticular discoloration was a chronic cutaneous disease, thereby obtaining an exemption from military service. With a similar view, acrid substances, acids, &c. have been applied to the skin. Porrigo (tinea capitis) in the active stage is simulated by applying nitric acid to the head, after protecting the face with fatty substances, but the chronic state is imitated by the use of depilatories of different kinds, applied sometimes in patches, so as to resemble the Porrigo decalvans.

Jaundice.—The yellow colour of the skin in this disease has been simulated by painting it with an infusion of the root of the *Curcuma longa,* tincture of rhubarb, an infusion of soot, &c. Hitherto the simulators of jaundice have not effectually succeeded in colouring the eyes, although smoke has been employed for this purpose. It is said that clay-coloured stools have been imitated to perfection, by taking daily a small quantity of muriatic acid.

Deafness.—This defect is frequently pretended by recruits, as also by deserters, and other faulty individuals, who find themselves in the provost-guard. Deafness is difficult to simulate consistently. By commencing a conversation with a man who pretends deafness, he will not improbably continue to answer questions after the voice has been gradually lowered to a moderate tone. A recruit lately joined the depot of the East India Company at Chatham, from Cork, who alleged that he had almost totally lost the sense of hearing, and the evidence of his comrades went to support his testimony. Dr Davies admitted him into hospital, and put him on spoon diet. For nine days Dr D. passed his bed without seeming to notice him during his visits to the sick. On the 10th day he felt his pulse, and made signs to him to put out his tongue; then asked the hospital-sergeant what diet he gave the man? Spoon diet, replied the sergeant. Dr D. affecting to be very angry with the sergeant, said, Are you not ashamed of yourself; the poor fellow is almost starved to death; let him instantly have a beef-steak and a pint of porter. Murphy could contain himself no longer, he completely forgot his assumed defect, and with a face full of gratitude, addressed Dr D. saying, God Almighty bless your honour, you are the best gentleman I have seen for many a day. Deafness is sometimes excited, and for this purpose a pea has been introduced into the external ear, as also by introducing an irritating fluid into the auditory tube, thereby causing inflammation, and temporary loss of function.

Deaf-Dumbness.—This defect is occasionally simulated by soldiers who wish to obtain their discharge, and, however improbable it may appear, some have played their part so well, as for a long time to escape detection. A trooper of the name of M'Keon, belonging to the 7th Dragoon Guards, affected one morning to be both deaf and dumb. No such disability existed the previous evening. Many means were attempted to excite him to indicate that he possessed the sense of hearing, but without success. Firing a pistol close to his ear produced no effect. After keeping him a long time in the Regimental-Hospital, he was sent to the Edinburgh Infirmary, and was discharged from it as incurable. No noise, however sudden or artfully employed, succeeded in appearing to rouse his attention. Every one thought the assumed defect real, and his situation excited the pity and commiseration of all the officers of the corps. At the end of about a-year he was recommended to be discharged, and left Dundalk, where the regiment was quartered, on his way to Dublin, to pass the invaliding board for a pension. During the first day's march he got intoxicated, and at the same time recovered the use of his tongue. His escort brought him back to the regiment next day. Before he arrived at Dundalk his deaf-dumbness returned. He was tried by a court-martial, and sentenced to receive 800 lashes, but as he still held out, it was deemed advisable to send him to the General Hospital in Dublin, that he might be inspected by the medical officers of that establishment, before the sentence of the court-martial should be carried into effect. Here I am informed a hope was held out to him, that if he confessed the fraud the sentence would be remitted. He did so, and returned to the regiment without evincing the slightest degree of shame. This is a good instance of the surprising obstinacy and perseverance with which some simulators will persist in prosecuting a scheme to obtain their discharge.

The detection of a fallacy of this kind ought not to be difficult, although it may be very hard to induce a simulator to give in. If a person has acquired the habit of speech, and is able to move his tongue, he is certainly an impostor, should he pretend to be dumb.

Contractions.—Contractions of joints are frequently pretended by soldiers, apparently with the view of obtaining their discharge. The diagnosis in affections of this nature is sometimes so obscure, that the most experienced and careful observers have been deceived. It is difficult to conceive how long an impostor will persist in pretending a defect, and what trouble he sometimes gives before he is detected, or, at any rate, before he is convicted. In illustration of this observation, I will quote the case of a recruit, being the most recent that has occurred at this depot. R. Haddock, a recruit for the 61st Regiment, during a scuffle with a comrade on the 28th April 1825, had his right arm slightly contused. He was sent to hospital, and discharged cured in a few days. While in hospital, he showed a disposition to affect a much greater disability of the arm than staff-surgeon Stringer, under whose care he was, presumed to exist.

3d June.—He was deemed ineligible for the service by Dr St John, surgeon to the 61st Regiment, in consequence of a "contraction of the right arm, from an injury received since he enlisted. This man may recover the use of his arms under hospital treatment."

6th June.—He was examined by a medical board at Limerick, who "found that he had a subluxation of the right elbow joint, in consequence of which the muscles were contracted." The board was pleased to add, that no medical officer, who did his duty correctly, would approve of a man such as Haddock, and finally recommended his being discharged from the service, a suggestion which was complied with by the commander of the forces.

22d June.—Haddock was approved by Dr Irwin at Sligo, as a recruit for the 12th Regiment, and by me on the 22d November.

14th February 1826.—He was reported to be unfit for the service by an assistant surgeon of the 12th Regiment, who stated that "considerable weakness is evident from a recent fracture of the arm, so that he is incapable of lifting any weight." He added in his report, that Haddock had been a considerable time in hospital "in consequence of asthma; a complaint he had laboured under for many years."

21st February.—I was called upon to explain, for the information of the major-general commanding, the circumstances under which I approved of Haddock. My answer led to his re-examination by a medical board, which assembled at Cork on the 4th March, and, after a minute inspection, found him free from disease or disability, and recommended that he should not be discharged.

A morbid contraction of all the fingers of a hand is sometimes pretended. Contractions of this nature may be overcome, and the impostor convicted by introducing a cord with an eyed probe between the fingers and the palm of the hand, then gradually applying weights so as to expand the fingers. General Ross cured a case of clenched hand very rapidly when he commanded the 52d Regiment. The soldier asserted that the fingers of his right hand suddenly became contracted, so that his fist remained permanently closed. He was taken into hospital, and kept there without any symptom of improvement, until the general's patience was exhausted. He was then accommodated in a solitary cell, in which was an elevated shelf; his right hand was secured to his body, and a loaf of bread and pitcher of water placed upon the shelf in such a manner that he was unable to partake of them without using his contracted hand. At the end of the first twenty-four hours, the bread and water remained untouched, but, by the termination of another diurnal period, both had disappeared. The fraud was acknowledged.

When doubts are entertained of the nature of the affection in knee-joint cases, the patient may be placed upon a pedestal some feet from the ground on his sound extremity. If the defect be only pretended, he will probably soon stretch out the contracted limb to prevent himself from being hurt by falling, as he is unable to stand long on one leg.

Stricture of the Urethra.—Mr Hutchison informs me that this affection was not unfrequently simulated by naval officers during the war, when they wished to leave a ship, perhaps in consequence of some disagreement. The introduction of a bougie is commonly advisable. It is not, however, at all times easy to ascertain the state of the urethra by one experiment, as a spasmodic action of the parts may occasion an obstruction to the bougie resembling stricture. I have known a case where it was suspected the man possessed a voluntary power of obstructing the passage of a bougie.

Incontinence of Urine.—To discover whether this affection be real or feigned is sometimes attended with considerable difficulty. The ordinary mode of detection is to exhibit a full dose of opium, so as to induce sleep, and observing if the bed be wet before the person awakes; but even in real cases of this affection may not the narcotic diminish the irritability of the neck of the bladder, and consequently retard an involuntary flow of urine? I have known full doses of laudanum, exhibited in cases of rheumatism, produce some degree of retention of urine. In that variety of incontinence of urine, which arises from bad habit, I think it extremely probable, that opium freely given might have the effect of retarding micturition. A French surgeon treated a doubtful case of this affection by ordering the man to receive twenty stripes on the breech, with the avowed intention of strengthening the kidneys. One dose produced a perfect cure. Recruits sometimes simulate this affection with so little art as to allow the urine to dribble from them during examination.

Hernia.—It has been attempted to simulate hernia (inguinal) in the same manner as hydrocele, a fraud already noticed.

Mr Hutchison, in a paper on Feigned Diseases, states, that he had met with a case of simulated hernia in a man who could, when he pleased, draw the testes up to the rings of the external oblique muscle, and retain them there, so as to occasion an appearance resembling rupture. The testes are frequently found in this situation, and sometimes require considerable traction to remove them from it. Some individuals have the voluntary power of contracting and relaxing the cremaster muscle; others can elevate the testicle of one side, but not the other; and I have seen a few persons who could voluntarily raise a testicle, but had not the power of letting it return into the scrotum.

Excretion of Calculi.—This affection is occasionally pretended. Very lately a private of the 73d Regiment complained of pain and uneasiness in the region of the kidneys, and eventually made a point of showing his urine with sabulous concretions in it. After a considerable period had elapsed, it was discovered that the sandy particles found in his urine were obtained from a stone in the wall at the head of his bed; his comrades having found him at work rasping the stone in the middle of the night led to his detection. A chemical investigation of pretended urinary concretions furnishes a ready means of detecting this fraud.

Fistula in Ano.—In France this disease was found to be simulated by making an incision near to the verge of the anus, and subsequently introducing a tent made of the root of the milk-thistle, or white hellebore, into the wound.

Ulcers on the Legs.—This affection is very frequently excited by recruits, and sometimes by old soldiers. The agents commonly employed are corrosives or irritants, such as nitric acid, acetate of copper, quicklime and spirits, lime and soap, bruised garlic and vinegar, the milk-thistle, the bark of the spurge laurel, and the juice of the euphorbium. The last substance is the agent generally employed in India. Some excite ulcers by mechanical means, particularly by abrasion. This is effected by rubbing the skin of the leg over the shin-bone with a small quantity of sand interposed between the thumb and the leg, the sand being allowed to remain on the irritated surface. Should the inflammation thus excited not be deemed sufficient, the operation is repeated. Ulcers of a very untractable nature are rapidly excited upon old cicatrices by this means. Ulcers are also sometimes occasioned by means of hard bodies strongly pressed upon the leg. Very lately, one of the recruits belonging to this depot was accidentally detected with a halfpenny imbedded in an ulcerated surface on his leg, surrounded by a tight ligature. Ulcers are sometimes pretended only. This mode of simulating an ulcer is effected by glueing a portion of a spleen, or the skin of a frog, upon a part of the body. Cancers have been successfully simulated in this manner, the surface is kept moist by the agency of a small sponge imbued with blood and water, which is placed under the dressing.

Artificial ulcers have in general a more distinct margin than those which are said to occur spontaneously, and may be considered indicative of an impaired constitution.

To prevent impostors from applying irritating substances to ulcers on the legs, and thereby retarding their recovery, it is frequently necessary to seal the bandage, for the purpose of preventing a future removal of the dressings. This measure is, however, frequently but partially effectual, as some determined characters will destroy the granulations by repeated blows over the ulcer, and by introducing pins through the bandage. It is occasionally necessary to enclose the leg in a wooden box. A friend of mine tried this means of defence in a case he had under his care, but still the ulcer continued to evince marks of mechanical injury. Eventually it was discovered that the granulations were destroyed by the introduction of a flexible rod along the leg, and within the box.

Ulcers in the Ears with Fetid Discharge are produced by introducing a tent, imbued with blistering plaster, into the external meatus, and repeating the application until the tube becomes ulcerated, and a discharge of puriform matter established. The fetid smell is imitated by dropping into the ear a mixture, composed of an empyreumatic oil, assafœtida, and old cheese. Disease of the ear has been effectually feigned by introducing a little honey into the external meatus.

Maiming.—The conscripts in France sometimes maim themselves by fixing the great toe in a position which will disable them from marching. Soldiers occasionally maim themselves for the purpose of obtaining their discharge, and in some instances this mode of regaining liberty has become epidemic in a corps. While the 89th Regiment was employed at the Cape of Good Hope, nine men belonging to it disabled themselves in the course of six weeks by gunshot wounds. They in general attributed the explosion of the musket to accident. A few instances of self-mutilations occurred immediately before leaving England. One man divided the *tendo Achillis* of the right leg with a razor; another cut off the thumb of his left hand, pretending, at the same time, that the mutilation was the result of accident; but when the amputated portion was examined, a deep incision was found in it, satisfactorily proving that complete excision did not follow the first stroke of the cleaver.

It is scarcely credible what soldiers will perpetrate for the purpose of gaining liberty and a small pension. During the insurrection in the Kandyan country in 1818, a private belonging to the 19th Regiment was standing sentry at a little distance from a post occupied by British troops. He was occasionally fired at by the enemy from the surrounding jungle. Availing himself of what appeared a favourable opportunity, he placed the muzzle of his musket close to the inside of his left leg, and blew away nearly the whole calf. He attributed his wound to a shot from the jungle, but the nature of the injury, and the traces of gunpowder found on the leg, told a different tale. The recent instance of a sergeant of the 62d Regiment, which has been noticed in the newspapers, is remarkable. He purchased a pistol, and hired a person to shoot him through the arm, probably hoping by this means to make it appear he had been fired at by some one disaffected to the military, and that he would be discharged with a large pension. During the late war, of thirteen men who volunteered from one of the Cork Militia Regiments into the 83d Regiment, nine disabled themselves when the corps was ordered to proceed to the peninsula.

Fractures.—Recruits who wish to be rejected at either intermediate or final inspections, and sometimes soldiers who are anxious to be discharged, affect impaired health or disability in consequence of fractures of the skull, or of some of the cylindrical bones. Frequently there is no evidence of fracture having occurred but the man's own testimony. When fracture of the cranium is feigned, the man asserts that he becomes deranged when he tastes liquor; and if of the bones of the inferior extremities, he complains of occasional pain in the part, and that he is unable to endure fatigue, and so on. The unblushing impudence with which impostors sometimes pretend to suffer under a feigned defect is almost beyond what could be imagined, although perhaps not more surprising than the occasional credulity of professional people. In the following case, both of these qualities are strikingly manifested. William Dempsy was approved by Dr John Brown, at this depot, for the 83d Regiment, in the month of February 1813, and transferred in the usual way to Dunburry Barracks, the quarters of the depot of the regiment. He was there "surgically rejected," in consequence, as stated, of having a *plate* inserted in his skull. According to Dempsy's own account of himself, he had served in the Phœnix frigate, and was shipwrecked in her, when he met with an accident by which his skull was fractured, a circumstance that rendered the insertion of a *plate* necessary. In consequence of this fictitious defect he was discharged, and immediately after a letter was addressed to the commander of the forces in Ireland by the Adjutant-General, signifying his Royal Highness's "command, that the expences incurred by the enlistment of William Dempsy must be paid by Dr Brown, who does not appear to have used due attention in the examination of this man;" observing, "at the same time, that Surgeon Brown's experience might have taught him, that in general no dependence is to be placed on the assertion of those who offer themselves as recruits in the *Dublin district*, and that, in order to guard against the like imposition being again practised, and to avert the consequence resulting from it, he will no doubt see the necessity of trusting only to his own judgment, and of not depending upon what any recruit may himself advance."

The same man, under the name of Christopher Dempsy, presented himself again at the depot, as a recruit of the 12th Regiment, on the 18th May 1813. He was instantly recognised, and Dr Brown, after examining him carefully, was of opinion that his skull had never been fractured. He was next examined by the army medical board, whose certificate, attested by the signature of Drs Harvey and Renny, stated, that "Dempsy is fit for service, as every part of the skull appears at present to be perfectly firm and sound." Eventually he was transferred to the army depot in the Isle of Wight, there to remain until an opportunity offered of forwarding him to join the 12th Regiment in the Mauritius.

Polypus.—Attempts have been made to simulate this affection in the nose, by introducing the testicle of a young cock, or the kidney of a rabbit into the nostril, and retaining it there by means of a small piece of sponge.

Ozæna.—This affection is sometimes simulated by impregnating a piece of sponge with some offensive juices, or oils mixed with decayed cheese, and putting the imbued substances into the nostrils.

Misformation.—Of all defects that disqualify for military service, personal deformity would be supposed to be the most unlikely to be feigned, for certainly none promises to be more easily detected. Malformation, to a certain degree, is, however, not unfrequently simulated by recruits; and in some instances their measures have been completely successful. Edward Brady, a recruit for the 58th Regiment, was approved by Mr M'Leod, surgeon to the 42d Regiment, and acting district surgeon in Dublin, in August 1819. He was forwarded to the army depot, Isle of Wight, where he feigned misformation so effectually, that a board of medical officers, which was assembled on the 4th September, to report on his case, found that he was unfit for the service, on account of "deformity of the spine and chest—strong inclination of the body to the right side—defective motion of the right arm and leg—pain on pressure upon the spinous processes of several of the dorsal vertebræ." In compliance with the finding of the board he was discharged. He returned to Dublin, where he was minutely examined on the 22d September by Dr Peile, deputy-inspector of hospitals, Dr Thomas Brown, and the late Mr Todd, professor of anatomy, who found his spine and chest well-formed, no inclination of the body to the right side, or defect in the power of motion of the right arm and leg, and no pain on pressure upon the spinous processes of the dorsal vertebræ. But, previous to the latter examination, the end for which deformity had been simulated was obtained—his discharge. In January 1822, Brady revisited this depot as a recruit for the 89th Regiment, he having been inspected and approved at Newry by staff-surgeon R. J. Browne. How many bounties this recruit may have received it is impossible to say. An acquaintance with the success of some simulators of disabilities tends to sharpen suspicion, and to show the necessity of great vigilance on the part of medical officers to counteract the unwearied stratagems with which they will sometimes attempt to defraud government, and eventually bring blame upon individuals. The above is by no means a solitary instance of success in this variety of imposition. Timothy Darby, a recruit for the 59th Regiment, was approved by Dr Thomas Brown during the autumn of 1821, and transferred to the depot of the corps in the Isle of Wight. The nature of the farce he acted there, may be inferred from the subjoined copy of a report made on his case by a board of medical officers.

"The board have minutely examined recruit Timothy Darby, 59th Regiment, and find a curvature of the upper part of the spine with deformity of the chest and shoulders, the left shoulder near two inches higher than the right, and the body slightly bent forward, with the head inclining to the left side. He has been in hospital upwards of two months under observation and treatment, large caustic issues have been made on each side of the spine, and the cough and pain he complained of on admission are removed. The board are of opinion that the deformity is incurable, and recommend his removal from the service."

This report is dated 10th December, and Darby was discharged on the 13th of the same month "in consequence" (as his discharge states) "of deformity in the spine and chest."

Dr Brown having been furnished with a copy of the above report, very naturally inferred that there must be some fraud in the business, as it was morally impossible that he would have approved of so deformed an object as appeared to be described by the board. A plan, which succeeded, was formed for intercepting Darby on his return home through Dublin; and on the 21st January 1822 he was inspected by three eminent surgeons, Messrs Colles, Todd, and Cusack, an extract from whose report I shall subjoin.

"We have this day minutely inspected Timothy Darby, and we are of opinion that he does not labour under any disease or deformity of the spine or chest; on the contrary, he appears to be remarkably well-formed."

Some impostors are such adepts in the arts of dissimulation and simulation, as to occasionally succeed in making a fraudulent illusion appear more probable than palpable truth.

On the 2d of November 1825, Darby made his appearance at this depot as a recruit for the 87th Regiment, but, presuming that he would be rejected on account of the cicatrices of two large issues on his back, and determined to make as much as he could of the service, he refused to accept of a smaller sum, as enlistment money, from the recruiting-sergeant, than five shillings. As I happened to be acquainted with part of his history the scheme failed. I returned him fit for the service; he was soon after transferred to the depot of the 87th Regiment, and finally approved. It may be observed that this man was formed with unusual symmetry. In cases where deformity is supposed to be simulated, the man should be laid on his back, and examined.

General Indisposition—Instances of simulation of disease sometimes occur, calculated to puzzle not only the most attentive, but even experienced medical officers. A medical friend of mine, who accompanied one of the divisions of the army in 1815, which marched upon Kandy, informed me, that a petty native officer, who had charge of a number of camp-followers, one forenoon after the morning's march, was affected with apparent convulsions, which lasted to a certain degree during the entire day and succeeding night. He seemed to be insensible to external agents; his pulse was irregular, and his extremities unusually cold. Various means for restoring suppressed sensation were attempted, and as my friend had some doubts respecting the real existence of disease, he frequently repeated them, but all without success. As the division was to move forwards next morning, means were provided to convey the man back to the coast. This was not however eventually found necessary, for a few minutes after the troops left the ground, the convulsion ceased, and the man took to his legs, and made a most expeditious retreat. So convinced were the officers of this man having laboured under a real affection, that my friend was accused of want of apprehension for suspecting him, and of cruelty for endeavouring to excite sensation by the frequent use of stimulants. It is possible, however, that the symptoms in this case may have in part at least originated from the passion of fear. The natives of the coast almost uniformly at that time evinced great reluctance to proceed towards the interior. Nearly about the same period, a very remarkable instance of the influence of fear occurred in the case of an officer (Captain D.) who was stationed at Batticalloa, a small fort on the east coast of Ceylon. This officer, upon hearing that the British troops had been ordered to prepare to enter the Kandyan territory, went to bed, and never from that moment uttered a syllable. The function of the lungs and heart continued, but there seemed to be no feeling, and no desire of motion. He survived about fifty hours, and then expired. Captain D. had formerly belonged to the Dutch service, and been employed in the Kandyan country, which had proved a grave to many of his comrades, a circumstance that induced him to entertain an extremely unfavourable opinion of a Kandyan war.

The extinction of life is by combination sometimes pretended, apparently for the purpose of deserting with impunity. An instance happened not long since in this district. A young soldier belonging to a recruiting party in Dublin, obtained leave of absence for a short time, and permission to visit his relations in the country. When his period of leave had nearly expired, the subdivisional officer, under whose charge he was, received a sick certificate, attesting that he was unable to join his regiment in consequence of ill health. One document of this kind followed another at regular intervals, and each averring that the soldier's health was becoming gradually worse. Eventually the man's connections waited upon the subdivisional officer, and informed him that their relation was dead, claiming, at the same time, his arrears of pay, &c. From some circumstance connected with the execution of the certificates, the officer suspected there was fraud in the transaction. He privately instituted an inquiry, and found that the man was not only still alive, but that he had never been sick. The relations made another attempt to obtain the pay due, which of course failed, and the soldier deserted.

Even death has been simulated. A friend of mine, an officer in the East India Company's Service, informed me, that he and a number of officers were one day breakfasting in the tent of their commanding-officer, when the body of a native, said to have been murdered by the Seapoys, was brought into the tent and laid upon the floor. There were some marks of injury on the body, and the cloth which covered it was bloody in several places. The adjutant, who happened to be present, was directed forthwith to parade the Seapoys, that the friends of the native might have an opportunity of pointing out the murderers. They could not, however, condescend on any individual, so as to warrant his being brought to trial. The adjutant returned to the tent rather out of temper, in consequence of being disturbed at breakfast; he commenced to make tea, and having the kettle in his hand, a thought struck him that he would pour a little boiling water on the body of the native, and did so, saying, if the fellow be dead, it will do him no harm; upon which the simulator started upon his feet, and scampered off as fast as his legs could carry him. It appears the native had received some slight injury from the Seapoys. By feigning the extinction of life, he, it was supposed, hoped that the commanding-officer would give his friends a little money to quash the business, or that he would have his vengeance gratified by causing the Seapoys to be severely punished.

The following return will show the number of recruits inspected at this depot during the year 1825, together with the number rejected, and the causes of rejection.

Return of Recruits Inspected at the Recruiting Depot, Dublin, (Center Recruiting District,) from 25th December 1824, *to 24th December* 1825.

Approved,	4839
Rejected,	1390
Total Inspected,	6229

Causes of Rejection.	No.
Ophthalmia tarsi,	3
Pulmonic diseases,	2
Epilepsy,	3
Weakness of intellect,	7
Unsound health, emaciation, sottish intemperance, worn-out, &c.	158
Traces of scrofula,	68
Syphilis primitiva,	26
——— consecutiva,	3
Gonorrhœa,	3
Chronic affections of the skin,	5
Tinea capitis, or traces of this affection,	15
Muscular tenuity,	30
Nebulous obscurity of the cornea,	3
Opaque specks of the cornea,	30
Cataract,	7
Closed pupil,	7
Amaurosis,	2
Strabismus,	2
Puriform disharge from the ears,	10
Defect in the function of hearing,	3
Loss of many teeth, diseased gums, &c.	22
Greatly enlarged tonsils,	1
Narrow chest,	10
Depressed sternum,	4
Deformed spine,	55
Defective condition of the superior extremities from malformation, contractions, mutilations, ganglions, &c.	90
Deformed pelvis,	7
Hernia, Inguinal, both sides,	1
Hernia, Inguinal, right side,	14
Hernia, Inguinal, left side,	17
Hernia, Ventral,	44
Hernia, Umbilical,	6
Laxity or enlargement of both rings,	19
——————— of the right,	6
——————— of the left,	56
Varicose condition of the veins of the left spermatic process,	46
Right spermatic process, unusually large,	3
Left testicle strangulated in the ring,	1
Hydrocele,	8
An unusually large state of both testicles,	3
——————— of the right,	3
——————— of the left,	10
Defective condition of the inferior extremities from malformation, nodes, exostosis, mutilations, misplaced toes, ganglions, &c.	155
Varicose veins of both legs,	35
———— of the left leg,	71
———— of the right,	64
Ulcers, cicatrices of ulcers, wounds, &c.	138
Old fractures,	18
Tumours,	7
Flatness of the soles of the feet,	34
Punished,	36
Men who have been in the army, but who refused to show their discharges,	3
Total,	1390

ABSTRACT.

Recruits.	Inspected.	Approved.	Rejected.	Per Cent. Rejected.
Town Recruits,	3315	2226	1089	32.8
Country Recruits.	2914	2613	301	10.3
Total,	6229	4839	1390	22.3

The term "country recruits," designates men who have been inspected, approved, and attested before they are submitted to the examination of the district surgeon. None of this class of recruits are rejected finally, but by the decision of a medical board, who exercise a considerable latitude of discretion in their determination. The members of a board rarely reject a recruit on account of a blemish which is not likely to affect his efficiency in a decided manner, their opinion being final; whereas a district surgeon, whose decision is only intermediate, finds it necessary to consider recruits ineligible for comparatively trivial, and sometimes for technical causes of disability. A rigid examination of recruits, in the first instance, is of much importance, even in a pecuniary point of view. On an average, each recruit raised in the country, and finally rejected, becomes a direct loss to government, for cash advanced, of about three pounds, consequently the amount forfeited in this district during the year 1825 exceeds nine hundred pounds.

Recruiting Depot, Dublin,
June 1826.

Art. II.—*Observations on the Effects of Inflammation and Injuries upon the Humours of the Eye.* By Alexander Watson, Fellow of the Royal College of Surgeons, &c.

Few changes in the structure of the eye-ball take place without previous inflammation. Many even of the changes of structure, attributed to injuries as their cause, are produced by the consequent inflammation; and many of the changes of structure, said to be congenital, may be traced to have had their origin from ophthalmia soon after birth. Unfortunately, also, there are few cases of inflammation affecting the more delicate structures of the eye, such as the iris, retina, or tunics of the humours, in which some disorganization is not produced. Besides the changes from inflammation and injury, in common with other parts of the eye, the crystalline lens, when injured, or when its capsule is opened, is liable to some very remarkable changes which are peculiar to itself. This humour is very easily detached from its source of nourishment, hence its death is easily occa-

Edin.r Med. & Surgical Jour. No. 89 Octr 1826.

Mr. WATSON'S ESSAY.

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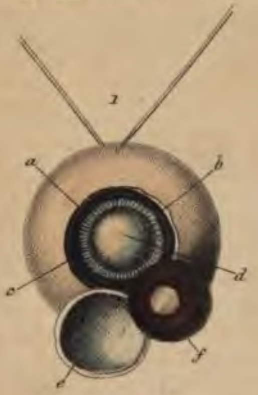

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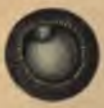

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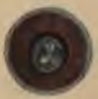

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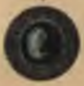

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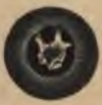

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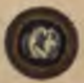

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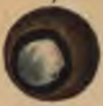

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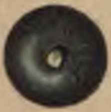

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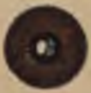

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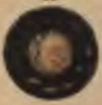

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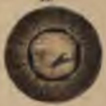

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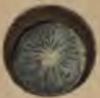

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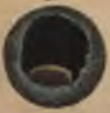

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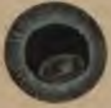

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W.H. Lizars sc.

sioned; and when its capsule is opened, the lens is exposed to the action of a solvent fluid, by which remarkable changes are effected.

In many cases of inflammation of the internal parts of the eye, whether from injury or other causes, it is only by examining the changes that appear after the inflammation has been removed, that the parts which have been affected can be accurately ascertained. It is often of great importance to examine the state of the organ some time after, to ascertain what changes have been produced by accident or disease; for, by such investigations, important facts are sometimes accidentally determined, relative both to anatomy and the cure of disease.

Though much has been said by different authors respecting the connections of the crystalline lens with its capsule, and those of the capsule with other parts of the eye, very contradictory descriptions, and consequently indistinct and erroneous notions, prevail upon the subject. It is a prevailing opinion, for example, that the ciliary processes embrace the crystalline lens, and retain it in its proper place. Very vague notions are entertained respecting the manner, and from what source the lens and its capsule are nourished, &c. But it would be useless, as it is unnecessary, to enumerate prevailing errors. The subject is one, certainly, of extreme difficulty; but it is also one of very great importance, and, therefore, demands careful investigation.

The anatomy and pathology of many parts of the body mutually throw light upon each other. This remark applies particularly to parts of a minute and delicate texture, the structure and functions of which cannot in a direct manner be accurately determined. By studying accurately the appearances of the natural healthy structure, and the changes produced by disease, difficulties may be sometimes explained, and uncertain points established.

As a preface to an account of some changes from inflammation and injuries that take place in the humours of the eye, I shall briefly make a few observations on the structure and connections of these parts.

1. *Of the Vitreous and Crystalline Humours, their capsules and attachments.*

The vitreous humour does not appear to have any vascular connection with the retina, unless by a branch from the *arteria centralis retinæ*. The chief blood-vessels from which the humours of the eye are supplied, pass along the coats of the eye to the anterior of the eye-ball. The ciliary body and processes have not only all the other parts of the eye connected to them, but they form a sort of centre to which the blood is sent for the supply and maintenance of all the internal parts of this organ. The ciliary processes are more highly vascular than any other part of the eye. When the arteries of the eye are injected, these processes become completely coloured by it. But the probable function of these ciliary processes in the eye has not yet been satisfactorily established. Like the *pia mater* of the brain, their doublings, or plicæ, seem to form an increased extent of surface for the more minute subdivision of the blood-vessels, from which the humours are secreted and nourished.

Covering the anterior part of the smooth transparent capsule, or hyaloid membrane of the vitreous humour, for the space of rather more than an eighth part of an inch around the crystalline lens, there is a more dense and thick membrane than the hyaloid, which has been called the *zonula ciliaris*, the *zonula Zinnii*, or the *corona ciliaris*. This membrane is formed into small doublings, or plicæ, resembling the ciliary processes; and hence they have been called the ciliary processes of the vitreous humour. The ciliary processes, or rather the pigmentous membrane covering their internal surface, is firmly attached to the zonula ciliaris, the depressions of the one corresponding to the eminences of the other, so that the number of these is the same in each. The zonula ciliaris may be easily separated from the vitreous humour by inflation; and when thus inflated, it constitutes the anterior part of the canal of Petit.

The crystalline lens, surrounded by its own proper capsule, is set into the anterior part of the vitreous humour, as if into a cup, having its posterior half imbedded in this humour. The posterior surface of the capsule of the lens is closely attached to the anterior part of the hyaloid membrane, which forms the cup into which it rests. Whether this intimate union is formed by cellular membrane, or by vessels, is uncertain; but it is probably in part by both. From this attachment to the hyaloid membrane, the capsule of the lens may be separated without either of them being injured.

In my dissections, I have long anxiously looked for a continuation of what has been termed the capsule of the aqueous humour, over the anterior part of the capsule of the lens, expecting to have found it reflected from the root of the iris, but have not yet been so fortunate as to see it. I am convinced its existence in the human eye can only be a matter of inference from analogy, not from direct demonstration.

Connecting the ciliary processes with the capsule of the lens, however, I have observed a complete circle of minute radiant semi-transparent lines, which I conceive to be the principal vascular connection between the capsule of the lens and its neighbouring parts, and from which the lens and anterior part of its capsule derive their nourishment; the posterior part of the capsule probably deriving its nourishment from the hyaloid membrane, for reasons afterwards to be mentioned.

The extremities of the ciliary processes are not in contact with the capsule of the lens.* This is easily demonstrated by the anterior half of an eye being held up between the observer and the light; a distinct ring of light will be seen surrounding the lens, between it and the ciliary processes: or the cornea and iris may be carefully removed, and the space between the anterior extremities of the ciliary processes and the capsule of the lens will be distinctly seen. The space now described is represented in the plate, Fig. 1. Stretching across this space, what I conceive to be the vessels of the lens, may, with a clear sunshine light, be seen after the part has been rendered opaque by immersion in spirits. These vessels seem to pass from the ciliary processes to the capsule of the lens, and are inserted into it at a short space anterior to its external margin. I have in my possession a preparation made by removing the lens inclosed in its capsule from the vitreous body, after a certain degree of decomposition, in which the vessels have remained attached to the capsule, from the margin of which they float like radiant lines. I have similar preparations of the vessels of the retina. The medullary part being washed carefully away, the vessels and their ramifications remain. In the eye of the ox, the vessels described as going to the capsule of the lens may be injected. I have deposited, among others, a preparation showing this in a most distinct manner, in the Museum of the College of Surgeons.

The vitreous humour, though apparently of a viscid consistence, is equally fluid with the aqueous humour. But the vitreous humour is contained in a very fine cellular texture, made up of processes sent through it from the inner surface of the hyaloid membrane, which causes it to have the apparently viscid consistence. When the vitreous humour removed from the eye has its tunic ruptured at any part, the whole of the fluid flows out, from its containing cellular membrane, showing that these cells communicate freely with each other. These cells prevent the undulation of the aqueous fluid forming the vitreous humour, which might alter the form of the eye and the focus of vision. When these cells are destroyed by disease, the iris undulates backwards and forwards, and vision is indistinct. This, as well as other subjects upon which pathology throws considerable light, will be afterwards noticed.

The attachment between the crystalline lens and its capsule must be extremely minute and delicate. For when the capsule is ruptured, the lens is very easily expelled from it, the elasticity of the capsule being almost sufficient for this purpose. As the vessels connecting these parts, even after the most successful injections of the eye, have been seen only by very few anatomists,* their existence has been doubted.

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* I find that Mr Jacob has noticed this. See Medico-Chirurgical Transactions of London, vol. xii.

That vascular connections really exist between the lens and its capsule, though they cannot be seen, may reasonably be inferred from the consideration of several facts. 1st, That no part of the animal frame is nourished in any other way but by vascular connection. 2dly, The regular form and beautiful organization of the lens in concentric layers. 3dly, The death of the lens when sufficiently moved within its capsule to tear it from its supposed vascular connections. 4thly, When it is wounded, opacity is caused probably by the enlargement of its vessels, for adhesive matter is poured out, as when other parts of the body are wounded and inflamed.

That the vessels of the lens are extremely minute, is *a priori* to be expected, on account of the state of extreme subdivision in which its arteries must be, for the arteries entering the globe of the eye are much subdivided upon the choroid coat—very much subdivided on the ciliary processes—still further subdivided on the capsule of the lens; so that when they arrive at the lens itself, they must be in a state of extreme tenuity.

The crystalline lens of the eye is not an uniform mass of unorganized matter, like the contents of a morbid cyst. It is a transparent body, of nearly the same shape and size in all the individuals of the same species; organized in distinct and uniform strata; is always of greater density at its centre than at its circumference; and is subject to the same changes that occur in other organized parts, inflammation, and loss of vitality. How then can this be a part nourishing itself by imbibition?

Having premised these remarks on the anatomy of the vitreous and crystalline humours, I shall proceed to detail some remarkable and important changes in the different humours of the eye from injuries and inflammation, which have not been particularly pointed out. These observations I shall illustrate by a selection from a large collection of cases and delineations.

2. *Inflammation of the Crystalline Lens from Injury.*

When the lens is injured, and its capsule ruptured or torn by a sharp instrument, without any of these parts being detached from their vascular connections, they inflame, the neighbouring parts become affected, semitransparent albuminous matter is poured out from the opening into the chambers of the aqueous humour, and the lens becomes opaque. The injury, when slight, seems to be repaired by a process of nature, of which the effusion of lymph is a part; but an opaque state of the injured part remains. In cases of cataract, when the lens is neither in a dead nor fluid state, precisely the same effects result from the laceration of the capsule and lens with a needle, without displacing them from their vascular attachments. Hence such an operation is quite unavailing. These remarks are illustrated by the following cases.

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* Haller.

Case 1.—J. P. ætat. 24, received an injury upon his right eye from a piece of iron. The iris and capsule of the lens seemed to have been penetrated at their upper part. The iris adhered to the capsule of the lens, and through the wound an effusion of albuminous matter took place into the anterior chamber. The lens became opaque; the eye was inflamed for some time after the injury. When the inflammation subsided and the effused lymph was absorbed, the eye presented the appearance represented in Plate, Fig. 2. the lens continuing opaque.

Case 2.—A. B. had a semitransparent spontaneous cataract of left eye, which had been gradually increasing for several years. The anterior part of the capsule of the lens was somewhat torn with a needle, without any displacement either of the lens or capsule. The eye inflamed; an effusion of semitransparent albuminous matter took place. In a short time, the inflammation abated, the effused matter was absorbed, and the eye was left in the same state as before the operation. Fig. 3. shows the appearance of the eye, with the effusion from the lens.

3. *Death and Solution of Lens from Injury, the Capsule retaining its Vitality.*

If the lens receives such an injury as detaches it (within its capsule) from its vascular connections, the death of this body appears to be the consequence. The capsule, though injured, if not torn from its vascular attachments, retains its vitality and transparency. The lens, however, becomes opaque, and, when its capsule has been opened, is exposed to the action of the aqueous humour. In such circumstances, the lens is dissolved and absorbed with the aqueous humour—rapidly and completely in young subjects, more slowly, and generally imperfectly in elderly persons. These changes could not take place unless the lens had previously lost its vitality; for the solvent power of the aqueous humour cannot be conceived to be so great as to enable it to act chemically upon a living part.

After the removal of the lens from its situation by an operation or injury, the capsule retains its transparency, but the wounded edges of it contract, from elasticity, towards its circumference, when the vessels connecting it with the ciliary processes have not been injured.

These changes are frequently induced by operation to remove the lens when opaque—more especially in young subjects. In such cases, therefore, as well as in cases of accidental injury, the changes described may be observed. The transparent state which the capsule retains, is amply illustrated by the cases in which an opaque lens has been successfully removed from this membrane, whether by solution, depression, or extraction.

Probably few cases occur where the lens is detached from its union with the capsule by an injury, without the capsule being at the same time either wounded or detached. I have not observed any such cases.

Case 3.—A. B., a girl 12 years old, got a needle accidentally thrust into her eye, by which the lens and its capsule had been penetrated. The lens was in a short time dissolved by the aqueous humour, and therefore must have been moved from its connections with the capsule, and become dead; but the capsule had not been detached from its connections. Figure 4. represents the eye when the lens was about half dissolved, the capsule remaining transparent.

Cases of operation for cataract, as has been already mentioned, amply illustrate this subject. When these are adroitly and skilfully performed, the lens is removed from its situation in the axis of vision, the capsule, if in a healthy state, remaining transparent.

4. *Death of Lens and its Capsule from Injury and from Disease.*

When an injury inflicted on the eye has been of such a nature that the crystalline lens and its capsule have been detached from their connections, they lose their vitality—they become opaque, and are quite in the state of a foreign body in the eye. Though by such injuries these parts are sometimes quite removed from their natural situation, the vessels by which they are nourished may be torn asunder, the lens and its capsule become dead, and yet they often remain *in situ* from the attachment of the posterior part of the capsule to the hyaloid membrane; a very slight movement being sufficient to rupture the slender vessels surrounding the capsule of the lens.

In many cases where the lens and anterior part of its capsule evidently become dead, the posterior part of the capsule seems to retain its vitality and transparency; showing that this latter part is probably nourished by a different set of vessels from which it is not so easily detached, owing to its close connection with the hyaloid membrane.

The well-known fact that the lens and anterior part of its capsule are frequently in a diseased state, while the posterior part remains sound, strengthens the probability of this conclusion.

When the capsule of the lens has been ruptured or opened by the injury, the lens is subjected to the action of the aqueous humour, and may undergo the changes of solution and absorption mentioned in the preceding section. The dead capsule, however, not being so easily acted upon by the aqueous humour, remains, becomes opaque, shrivelled, and contracted. In the course of time, the more soluble parts of it, in some cases, seem to be removed by the aqueous humour, while those parts remain in the form of detached shreds which seem to be insoluble in that fluid. When subjected to the action of the aqueous humour, the lens does not always dissolve; in elderly persons, when hard or firm in its texture, it seldom becomes completely dissolved.

Precisely similar changes to those just described are produced by operations for cataract, when in the performance of them the capsule as well as the lens has been torn from its vascular connections; the opaque and shrivelled capsule which remains having attachments so slight, that in many cases it has a tremulous motion in the eye.

When the lens and its capsule have been detached and deprived of their vitality, without the capsule being opened, as by a blow upon the eye or by disorganizing inflammation of the globe, they have, in some of the cases which I have seen, rolled about in the eye for some time semitransparent and unchanged, in others have become quite opaque.

In many instances that have come under my notice, the lens and capsule had apparently become dead after an attack of inflammation, and in some without any evident cause, after which these parts remained *in situ* and became of a yellowish white colour. In one of these cases, I opened the capsule with a needle, introduced into the eye, nine years after the patient had lost her sight, when I found the capsule adhering to the iris, tough, opaque, and filled with a milky fluid.

When the lens inclosed in its capsule becomes dead, probably by the lapse of time, it becomes fluid from decomposition.* After this has taken place, the capsule appears in some cases to have given way, and discharged its contents into the aqueous humour, by which it is absorbed, leaving the opaque dead capsule.

The death of the lens, whether spontaneously or by purulent ophthalmia at the period of birth, is probably in many cases the cause of what has been termed *congenital cataract*, which has burst into the aqueous humour, or been found in a fluid state when operated upon. *

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* In making dissections, upon opening the capsule, after the parts have lain some time, I have found the lens converted into a milky fluid.

These observations are illustrated by the following cases:

Case 4.—When the eye, Case 1, became free from inflammation, the lens being opaque, a needle was introduced through the cornea, by which the anterior part of the capsule was opened, and the lens very freely broken up. By this operation the lens must have been completely detached from its connections with the capsule, as also the latter from its nutrient attachments. The lens became dissolved, and absorbed with the aqueous humour, but the dead, opaque, and shrivelled capsule remained. Fig. 5 represents the eye about a year after the operation in which these appearances are seen. The attachment of the iris to the capsule and the hole through it formed by the injury, and which has become enlarged by the motions of the pupil, are also well seen.

Case 5.—J. C. æt. 16, some years previously was under my care, on account of his having got a pointed arrow shot into his eye by one of his companions. By active treatment the inflammation was removed, but the lens and capsule became opaque. The lens was gradually dissolved by the aqueous humour, but the opaque shrivelled capsule remained. Fig. 6 is a representation of the eye several years after the injury, in which the state of the capsule is distinctly seen, the pupil having been previously dilated by belladonna.

The injury done to the eye in the above cases probably wounded and detached both the capsule and lens from their vascular attachments. Hence the death of both, and the solution of the lens.

Case 6.—Fig. 7 represents the eye of a young man, in which an operation for cataract by the needle had been performed, and in which the lens and capsule had undergone precisely the same changes as in the preceding case. The injury and absorption of a portion of the iris from one side, shows the rude manner in which the operation had been performed, as well as the detachment of the capsule.

Case 7.—Fig. 8 represents the eye of an old man from which the crystalline lens had been extracted by operation. An opaque shrivelled capsule is seen projecting through a contracted pupil. The cornea is also opaque at the place of the incision. This case exhibits changes of the capsule similar to those above, probably also occasioned by the rudeness of the operation.

Case 8.—Fig. 9 represents the eye of a boy of 14 years, in which a contracted opaque capsule remained after the spontaneous solution and absorption of a congenital cataract. In this case probably the first change was the death of the lens and its capsule.

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* What has been termed congenital staphyloma may generally be traced to have been caused by ophthalmia after birth.

Case 9.—Fig. 10 represents the eye of a young man, who, several years previously, had received a blow upon it with a snowball, which probably destroyed the vascular connections of the capsule, and consequently caused the death of both it and the lens. These have a very opaque yellowish appearance. The capsule seems not to have been ruptured, and therefore continues distended with the remains of the lens.

Case 10.—Fig. 11 represents the eye of an old man which had been blind since his childhood, from inflammation during small-pox. The capsule and lens seem to be in the same dead opaque state as in Fig 10.

Case 11.—Fig. 12 represents the crystalline lens in the anterior chamber, lying in contact with the cornea. The eye had been in an inflamed state for eight weeks previously. There seemed to be no other reason for the change of situation of the lens.

Case 12.—Figs. 13 and 14 represent the eyes of a girl 7½ years of age, who had been affected with inflammation in them for three months. When the inflammation was removed, the eyeballs seemed generally enlarged, and some staphyloma of the sclerotic coat was produced. The lens of each was seen floating to and fro in the aqueous humour.

Case 13.—There is a preparation of an eye in my possession, into which a fork had been thrust several years before death. One prong of the fork seems to have entered at the side of the capsule of the lens and detached it from its vascular connections. About a fourth part of the circumference of the capsule had been detached; a corresponding portion of the lens is wanting; and the capsule is collapsed as far as the centre, showing the partial death, and want of regeneration of the lens, in consequence of the partial detachment of its capsule from the vessels which nourish it.

The foregoing observations relate chiefly to the crystalline lens. They point out several important circumstances to be attended to in performing operations for cataract.

1. When it is desired to make the lens undergo solution in the aqueous humour, it is necessary to detach the lens from its vascular connections by the operation, as well as to wound it.

2. When the capsule of the lens is transparent, the detachment of it from its vascular connections is carefully to be avoided, that it may retain its transparency and contract towards the ciliary processes, instead of becoming opaque and shrivelled into the centre of the pupil, which it does when so detached.

3. That the detachment of the lens inclosed in its capsule, before opening the capsule, is carefully to be avoided, as these parts, unless imbedded in the vitreous humour, may float about in the eye unchanged.

A detail of some remarkable changes that take place from injury and disease in the other humours of the eye, will form the subject of a future communication.

35, *Dublin Street,*
Edinburgh, August 1826.

ART. III.—*A Case of Tetanus and Locked Jaw.* By PETER CLARK GIBSON, Surgeon, &c. Edinburgh.

AMONG the innumerable diseases to which humanity is subjected, none, perhaps, is more alarming in its progress, or so fatal in its issue, as tetanus, whether we regard it as a primary or symptomatic disease. The fatality, which has been observed to follow it, is recognised in the strongest language by both ancient and modern physicians.

Although there be nothing very new in the communication I am about to offer, I think it becomes the duty of every one who may have been at all successful in curing this complaint, to communicate his treatment to the profession; and, therefore, without farther apology, I will venture to give the following case with all the faithfulness and candour in my power.

Alexander Scott, æt. 24, of a robust and sanguine constitution, on the 12th of January last, consulted me regarding an unusual stiffness in the muscles of his lower jaw. This feeling, though unaccompanied by any other, excited readily my suspicion of incipient locked jaw; but as I could not upon the strictest inquiry find out any ostensible cause to confirm this idea, I was induced at that time to consider it as an effect of cold. His bowels being reported to be in good order, I simply recommended to him a scruple of Dover's powder, to be divided into four doses, and taken at proper intervals when in bed; also a strong opiate and stimulating liniment to be rubbed upon the part affected.

Next day, however, finding himself no better, and being a little apprehensive, (though a young man, of a strong mind,) that it might increase, he called to request me to visit him at his own lodgings, where, on his return, he was seized with a violent and sudden contraction of the anterior muscles of his body, which dashed him forwards from off his seat against the wall. All power of voluntary motion being suspended, and no person being present to assist him, he lay as if he had been rivetted to the floor. In this pitiable situation he continued for some time, and on recovery was affected with slight spasmodic twitchings betwixt his shoulders and back of the neck. These feelings increasing both in frequency and severity, I was sent for, and during my visit, I observed that they became in a short time so powerful as to draw his head and body convulsively backward. He was quite unable to turn himself at this time, and felt occasional spasms attacking his legs, which were rigidly extended. Observing the rapidity with which the symptoms of this formidable disease were making their approach, I requested that a person should be sent immediately for the following mixture, of which he was to take an ounce every hour:

℞ *Mistur. camph.* ℥*iv. Spirit. æther sulph.* ʒ*ij. Tincturæ opii* ℥*ss. M.*

I had not long left him, when the preceding symptoms were followed by a fixed spasmodic contraction of the muscles of the lower jaw, which unfortunately closing upon the tongue, severely injured it. Being again sent for, I observed, that notwithstanding the jaw had yielded just so much as to relieve the tongue, the flexor muscles of the head and back were so rigidly affected, that he had not power to move them in any direction. At this time, also, he began to complain of an uneasy sensation at the root of his tongue, a feeling of constriction in his chest, and a violent pain under the ensiform cartilage, shooting from this point transversely to the spine. It may not be unworthy of remark, that so soon as this pain was felt, all the other symptoms and feelings became exceedingly aggravated, and his head was pulled forwards and backwards almost in an exact proportion to the inclination it had when the contraction of the extensor or flexor muscles took place. It may seem strange that the general spasm affected both the flexor and extensor muscles, drawing the body in opposite directions at one and the same time; yet I frequently remarked, that when the head was drawn backwards, the body, moving as it were upon an axis, was as forcibly pulled forwards. This occurred to a remarkable degree in two instances, the one to which we have already alluded, and the other when supporting himself in bed upon his hands and knees. This paroxysm, perhaps, was the most violent he ever experienced. It projected him with convulsive force out of bed against the edge of a table, which cut him severely above the left eye-brow. His countenance, from the commencement, was expressive of extreme distress and anxiety; his face and body bedewed all over with a clammy sweat. Pulse was little disturbed. His bowels being rather slow, half an ounce of castor oil, with the same quantity of oil of turpentine, was ordered to be given immediately by the mouth, as his deglutition remained unaffected, at least during the absence of the convulsion; also a liniment composed of an ounce of resinous ointment, with three drachms of powdered opium, and one drachm of camphor, to be rubbed upon the spine and parts affected with spasm.

10 o'clock P. M.—Has been taking the mixture regularly, and the liniment has been applied twice, from which he says he experiences some relief; jaws remain almost in close con-

tact; oil has not operated. To get a common enema, with an ounce of oil of turpentine.

15th, 10 o'clock A. M.—Injection was not given last night, being objected to, and he has had no sleep all night from the spasms recurring so frequently, but he thinks they are less severe and shorter. Jaws cannot admit the point of the little finger between them. Pulse 84, soft and slightly irregular; skin moist and cool; bowels still closed. The draught with oil of turpentine and castor oil to be repeated.

10 o'clock P. M.—Continues much as in the morning; oil has not operated. To take three tea spoonsful of sulphate of magnesia every second hour, till the bowels be freely opened.

16th.—Slept at intervals during the night, though much disturbed by startings. Spasms continue less severe. Complains this morning of a sharp darting pain in the right groin, which shoots obliquely upwards to the umbilicus; also of a corresponding pain in the axilla of the same side. Glands in both places preternaturally swollen and painful; stiffness of the jaw and hind-neck remains as before. Skin moist; appetite good; one alvine evacuation during night; feces extremely dark and fetid.

℞ *Infus. sennæ,* ℥vj. *Tinct. aloes æther.* ℥i. *Sit mistura statim porrigenda; atque ni alvus plene soluta fuerit, vespere repetatur.*

8 o'clock P. M.—Complains of the spasms in his right thigh and groin, and of the pain in the scrobiculus cordis being much increased. Anxious to come to some determined notion respecting the cause, I inquired again, and found out that he had, about three weeks ago, received a trifling injury upon the right thumb nail, which, though separated only to a very small extent from its attachment, continued exceedingly painful for three days, but afterwards healed kindly. He now recollects that four days after it was quite well the stiffness of his jaw commenced, and, not regarding it as a consequence of the former accident, it was treated with indifference till the time when he consulted me.

The cold affusion was ordered to be tried, and, if beneficial effects were experienced, to be repeated four hours after.

Continuentur omnia remedia.

17th.—Had the cold affusion last night, but it was not repeated. He felt as if an artificial intermittent had been produced, and the spasms were considerably increased.* Had copious alvine evacuations during night, and appearances were more natural than hitherto. Skin continues moist; pulse 84, soft.

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* The cold affusion was recommended with the intention of resolving the partial spasms into universal irritation, by producing the artificial fever which Hippocrates advises in his Aphorisms. Notwithstanding strong rigors, succeeded by intense heat of skin, were excited, no amelioration of the spasms was experienced, but, on the contrary, they were greatly augmented, particularly about the scorbiculus cordis.

℞ *Mistur. camph.* ℥*iv. Spt. æther. sulph.* ʒ*ii. Tinct. opii* ℥*i.; fiat mistura cujus unaquaque hora unum cochleare capiat.*

18th.—Has passed a comparatively easy night. Reports the spasms to be in general much relieved, and that he has enjoyed some sleep. Has not felt the pain about the scrobiculus cordis, or betwixt the shoulders, for a considerable time back, but says that the spasms continue to attack, with unabated severity, the right groin and axilla. Belly open; surface moist.

Continuentur mistura et linimentum.

19th.—Pain in groin less severe; complains of having no command over the abdominal muscles in the efforts of straining at stool, or in the attempt to evacuate his urine; jaws separate about a quarter of an inch; copious alvine discharge during night.

Continuentur mistura et linimentum.

20th.—Passed a good night, and enjoyed at intervals much sleep. Spasms continue less severe, and attack principally the abdominal muscles. The right oblique and the pubic half of the *recti* muscles feel exceedingly hard and painful to the touch. No farther motion in bowels since yesterday forenoon. To take an ounce of etherial tincture of aloes, and to continue the mixture and liniment.

8 o'clock P. M.—Continues the same as in the morning. Tincture has not operated.

℞ *Infus. sennæ,* ℥*vj. Sulphat. magnes.* ℥*ss. Aquæ ferventis,* ℥*vj. Fiat mistura quam primum sumenda.*

21st.—Bowels freely opened; feces still darkish; feels the general spasms greatly diminished, but pain and rigidity of the abdominal muscles continue. Is very drowsy, and much disposed to sleep. Pulse 92; surface cool. To get a glass of Port wine every hour, and to continue the mixture.

22d.—Wine has been used along with the other remedies, and much relished. Passed a good night, and was little disturbed by the spasms. Says that they now recur in so momentary and slight a form, that he knows not sometimes which part of his body they affected. Pain and stiffness of the abdominal muscles much better; bowels rather slow. To repeat the etherial tincture of aloes, and continue the mixture, liniment, and wine.

10 o'clock P. M.—Has continued free from spasms almost all day, and are not, since morning, excited by the approach of any article of medicine or diet to his mouth; free alvine discharge since morning; felt as if he had more command of the

abdominal muscles; stiffness in hind neck and shoulders considerably diminished; no farther relaxation of the jaw. To continue the treatment, and to take at bed-time a draught of a drachm of tincture of opium in a glass of wine.

23d.—Continues much as yesterday.

24th.—Thinks himself still getting better; alvine evacuations and urine continue to be voided with more facility. Mixture, liniment, and wine continued.

25th.—Took none of the mixture all night, and thinks that the spasms are more troublesome in consequence; bowels opened last night and this morning; appearances still dark; mouth can be opened about an inch. Treatment continued.

26th.—Is provided with a large chair, in which he prefers to sit; remains pretty free of spasm.

27th.—Sat in the chair all night, and experienced but little sleep. Spasms in the groin, he thinks, are a little more severe. Belly open.

12 o'clock noon.—Called on Dr Sanders, and informed him of the case, who, with great candour, approved highly of the remedies that had been given, and enjoined strictly their further exhibition, recommending, at the same time, a little mercury to be introduced into the system. Accordingly, the size of a nutmeg of the following ointment was ordered to be rubbed upon the spine and muscles of the jaw twice a-day.

℞ *Unguenti hydrarg.* ℥*ij. Pulveris opii,* ℈*ss. Camphoræ,* ʒ*i. M.*

10 o'clock P. M.—Has been pretty free from spasms since morning; pain in groin again diminished; ointment has been used twice: surface moist; belly open; pulse 102. Continue.

28th.—Patient reports his feelings in general to be better this morning than they have been. Sleep last night was more refreshing, and less disturbed by startings; pulse 102, soft and regular; perspires much.

℞ *Infus. cinchonæ,* ℥*vij. Tinct. digitalis,* ʒ*ss. Tinct. jalapæ,* ℥*ij. M. Ft. mistura cujus cap. uncias duas quaque tertia hora.*

March 1st.—Slept pretty well all night; alvine evacuation free, and feces more natural. Continue.

2d.—Passed a good night, and continues free from spasm; three alvine evacuations since last night, and appearances still more natural; perspiration greatly moderated; pulse softer and compressible. Was ordered to be cupped on the hind neck, as near to the base of the cranium as possible, from which seven ounces of blood were to be drawn, and a blister applied immediately afterwards.

10 o'clock, P. M.—Was cupped, and had the blister applied

soon after the morning visit. In other respects continues much the same. Continue.

3d.—Has spent a comfortable night, and experienced no return of spasm. The mercury is operating but slowly, the gums being scarcely, if at all, affected, notwithstanding its regular employment since the day prescribed; blister operated well; pulse about 90, soft, and slightly irregular.

Intermittatur Tinct. digitalis. Continuentur cætera remedia.

4th.—Muscles of the jaw more relaxed, and mouth can be opened wider. In other respects as yesterday.

℞ *Infus. gentianæ. c.* ℥*viij. Tinct. cinchonæ. Tinct. aloes æther. āā* ℥*ij. Fiat mistura cujus cap. uncias duas quaque tertia hora. Contr. medicamenta.*

5th.—Continues greatly better. No increased affection of the gums; bowels rather slow. To take an ounce of castor oil, and continue the other remedies.

6th.—Several alvine evacuations of more natural consistence and appearance; remains free from complaints; appetite continues good. Continue.

7th.—Thinks himself nearly well again; muscles of the jaw and hind-neck gradually relaxing, and mouth can be opened to admit two fingers.

8th.—Has slept well all night, and continues free of spasm; bowels open; feces more natural.

9th.—Continues, in every respect, as yesterday.

10th.—Slept undisturbed during the night; no return of spasm; gums still little affected by the mercury; belly opened last night and this morning; skin cool; pulse 84. Is taking the mixture less frequently, but continues the wine, bitter infusion, and the mercurial liniment as before.

12th.—Complains of no uneasy feeling whatever, except a little stiffness in right leg.

13th.—Free evacuation of more natural feces; tongue clean and moist; pulse 80; no uneasiness about the jaw, and mouth can be opened as wide as naturally.

Intr. Unguent. hydrarg. c. Contr. vinum et infus. gentianæ c. ℞ *Ol. terebinth.* ℥*ij. Aquæ ammon.* ℥*i. Pulveris opii* ʒ*ss. Pulv. Convolv. scammoniæ,* ʒ*ij. Adip. præparat.* ℥*iv. Misce bene. To be rubbed thrice daily along the spine.*

16th.—Continues well, and free of any complaint.

20th.—Walked out to-day, and felt no inconvenience.

Intr. mistur. camph. comp. Contr. vinum, linimentum, et infus. gentianæ compos.

27th.—Is quite well, and proposes going to the country for a few days.

April 3d.—Saw him in the country, and found him going about perfectly strong again.

The notions I had previously formed respecting this disease, induced me to adopt the above practice; and it appears evident, from the reports now given, that the greatest benefit is ascribable to the laudanum, conjoined with the æther and camphor; for soon after the employment of these medicines, the most manifest remission of the spasms was produced. The quantity of laudanum taken in twenty-four hours never exceeded one ounce; that of the sulphuric æther to the four ounce mixture two drachms. These proportions were continued so long as the convulsions showed any disposition to return; nor was it till after the remission became very considerable, that the intervals of exhibiting them were lengthened. Besides the benefit experienced by these medicines internally, considerable relief was afforded by the opiate liniment, notwithstanding of what has been written regarding the inefficacy of external applications in the cure of tetanus. I am convinced that, in this case, they not only alleviated the severity of the spasms, but furthered materially the cure of the disease. The good effects of the wine as an auxiliary are too apparent to be noticed. How far any beneficial effect can be ascribed to the mercury is difficult to say, as it was employed along with the other remedies, and not till sixteen days after the commencement of the spasms, which by that time had considerably yielded, both in frequency and severity, to the treatment previously pursued. It is but justice, however, to remark, that the rigid tenseness of the muscles of the neck and jaw became more relaxed after its employment, although no material alteration had been produced upon the constitution by its use.

6, *George's Place, Leith Walk, Edinburgh.*

ART. IV.—*On the Effects of Hyoscyamine and Atropia.* By Dr F. REISINGER. (Med. et Chir. Zeitung, February 1826, p. 237.)

IN the first part of the Bavarian Annals for Surgery, Ophthalmic Medicine, and Midwifery, I endeavoured to draw the attention of German physicians to the narcotic principles of Belladonna and Hyoscyamus, discovered by Brandes and Runge, and expressed my conviction of the great utility to be derived from these substances in several diseases of the eye, and preparatory to different operations, on account of their being stronger and more certain in their action than the extracts generally made from these plants. My expectations appear now to be realized; for, having found leisure to put them to the test of experiment, I have obtained the following results.

Hyoscyamine, prepared from the henbane seed, I found to be an extremely powerful substance for the dilatation of the pupil. A small drop of a solution of hyoscyamine (gr. 1 to ℈ss. of water) was introduced into the eyes of some dogs and cats; the eye was scarcely at all irritated in any case, and the pupil was so considerably widened, that, an hour after the application of the solution, only a small ring of the iris could be seen beyond the edge of the cornea; and after three hours, the pupil appeared as large as the cornea itself, without the power of vision being diminished, or any other bad symptoms being induced, even when the solution was introduced into both eyes. After three days, the dilatation of the pupil first began to diminish, and it was not before the sixth day that the iris recovered its natural state. A drop of a solution of extract of hyoscyamus, containing five grains of the extract to half a scruple of water, produced in the same eyes a considerable irritation for the space of from five to eight minutes, which was shown by the secretion of tears, shutting of the eye-lids, rubbing of the eye-brows with the feet, &c.; and a much less complete dilatation of the pupil, which in dogs disappeared after six or eight, and in cats after twenty-four hours. As soon as we learnt by these experiments, which we frequently repeated, that the hyoscyamine did not in its action injure either the conjunctiva, or any of the deeper-seated organs, as for instance the retina, I proceeded to apply it on the human eye, and found, that a drop of a solution of one grain of hyoscyamine, in a drachm of distilled water, applied to the eye of a cataract patient 71 years old, produced such a dilatation of the pupil, that only a small ring of the iris was apparent. The pupil continued dilated seven days, during which time the old woman could see moderately well, and no irritation whatever was produced in any part of the eye. At another time, a drop of a solution of five grains of extract of hyoscyamus, in half a scruple of water, applied to the same eye at another time, produced a considerable burning, and only a moderate dilatation of the pupil after twelve hours. From other experiments with the hyoscyamine, we obtained nearly the same results. The hyoscyamine, which was obtained from the stalk and leaves of the plant, irritated the eye much more, and was less efficacious than that obtained from the root.

The experiments made with the atropia under nearly the same circumstances, produced results similar to those obtained from the hyoscyamine. The atropia prepared from the root scarcely appeared to excel that obtained from the other parts of the plant in its efficacy. Both kinds of atropia acted on the eyes of animals very powerfully, so that the iris was almost invisible; but this extreme dilatation did not continue more than two days. Although it may be necessary to make a greater number of experiments to determine which of the two substances is the most active, still there can be no doubt of the superior excellence of the narcotic bases of these plants over the extracts which are generally used. In iritis, and preparatory to the different operations for cataract, they certainly deserve to be used in preference.

Dr Kopp recommended * the extract of hyoscyamus to be introduced into the rectum previous to the operation for fistula *in ano*, for the purpose of dilating the gut; he also advised the extract to be used in the form of clysters, for allaying spasmodic contractions of the rectum, and in that of ointment to be applied to the mouth of the uterus for the purpose of facilitating difficult births. In all these cases, and in several others, I would suggest the substitution of the hyoscyamine and the atropia for the extracts. At any rate, these substances ought to be used under these circumstances in preference to opium, which acts with so much irritation on the mucous membranes. Whether the internal use of these new medicines be attended with such advantage, remains to be determined by the result of new and careful experiments; still, judging from analogy, I think that, in spasmodic affections, their internal use is preferable to that of opium.

My own investigations into the subject are very limited, and confined to the following observations. A dog, three months old, swallowed, at ten in the morning, a grain of atropia, obtained from the root of the plant. In half an hour, the ears and tail began to hang, and the dog became inactive, surly, and sleepy. The pupils also were moderately dilated. Towards twelve the dog began to recover itself, and showed a disposition for his accustomed food; but at one, the animal became very uneasy, moaned frequently, lay flat on the ground, and slept at intervals. Weakness, and particularly loss of muscular power, were very apparent; the power of vision was also gone, as the dog tumbled over every thing. As the whole of the body was flaccid, and not in the slightest degree tender, I supposed that the moaning was not produced by pain, but by the loss of his sight, and the fear of light. At two, I took care that he should take some water and vinegar, with plenty of butter. Still the animal continued in the same state; it also now occasionally yawned; the nose was quite dry; the pupil still more dilated; and the palpitation of the heart was strong and rapid. The passage of the urine and feces was natural. At half past three vomiting of the undigested food took place; at five the dog recovered itself considerably; and at seven he was quite restored. Another dog, just of the same age, swallowed at the same time a grain of extract of belladonna. In half an hour's time, the same symptoms came on as in the other, but in three hours he was perfectly recovered. The same dose of atropia and hyoscyamine were given to some half-grown rabbits, but it did not produce the least effect on them. These animals appear to be very insensible, both to the external and internal action of the substances. It is extremely curious, that, as soon as the slightest particle of these narcotic bodies was introduced into the mouth of a cat, a copious flow of saliva and of foam came on, and at the same time the animal began to chew and loll out the tongue. I conclude these remarks with a wish, that those medical men who have it in their power, will give these principles a trial, and communicate the results of their observations to the public.

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* Beobachtungen im Gebiethe der ausübenden Heilkunde, 1821.

Landshut, 1825.

Art. V.—*Case of Incontinence of Urine, with the description and figure of an Instrument by which it was relieved.* By Thomas Brown, Surgeon, Musselburgh.

Having contributed much to the ease and comfort of one of my patients by the use of the instrument I shall afterwards describe, perhaps you may think the following communication worth inserting in your valuable Journal.

The case was altogether rather singular; but I shall not trouble you with its particular detail, only observing, that the patient was a female about forty years of age. Upon walking a considerable distance in very warm weather, the catamenia appeared nearly upon the termination of her walk, and being very much heated, she drank a full draught of cold skim-milk, which almost instantly brought on oppression about the præcordia, headach, and a total cessation of the menstrual discharge. In a few hours more, the headach became excruciating, and symptoms of hemiplegia presented themselves, with an attack of amaurosis in the left eye.

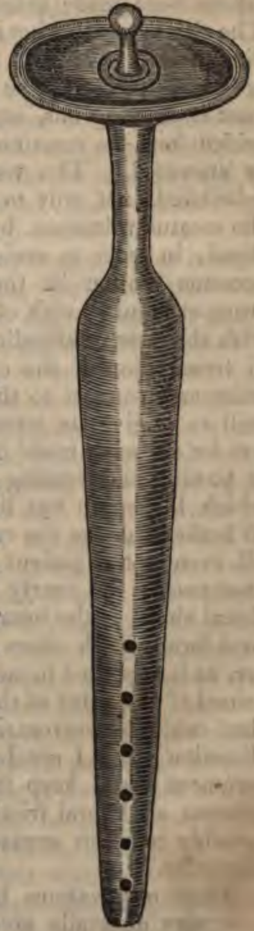
Under these circumstances I was called, and what with copious local and general bleeding, blisters, and purging, considerable relief was obtained,—but the affection of the eye remained the same. When the period of menstruation returned, no discharge occurred; and being of opinion that no complete cure could be effected unless the recurrence of the catamenia could be obtained, I directed my attention chiefly to this object, and at the end of the six months they reappeared, which was followed soon after by the complete restoration of sight.

Notwithstanding these favourable appearances of the perfect restoration of health, in a few months it appeared that the catamenia were small in quantity, irregular, and preceded and accompanied with considerable pain; and at the distance of two years from the first attack, she was seized, after exposure to cold, with pain towards the left side of the hypogastric region, and when I was called in, the symptoms of local inflammation were very severe, and, from the account of my patient, had existed for some days. Every exertion was made to subdue the inflammation, but, notwithstanding, the distressing symptoms were only partially relieved, and I was satisfied that either suppuration or some organic lesion had taken place within the pelvis. Accordingly, some months afterwards, a considerable quantity of bloody matter was discharged by the vagina and rectum, which afforded great relief, and the menses, which had been again absent for some months, now made their appearance. The discharge which appeared by the vagina and rectum came and went to a greater or less extent, and at the end of two or three months incontinence of urine occurred. This symptom soon gave my poor patient more distress than she had yet suffered, and all the ordinary means of relief were exhausted.

Concluding that, in all probability, this distressing symptom might be the consequence of some sloughing between the bladder and vagina, I introduced a catheter, and carefully examined if the instrument could be felt from the vagina, but no communication was discernible. I repeated the examination with a large sound, and still all seemed perfect. In the former stages of the complaint, circumstances had obliged me to examine by the touch, both by the vagina and rectum. I could find no communication between these parts, and the uterus being quite sound, I was inclined to think, that that part of the morbid discharge which was supposed to come by the vagina, had been discharged from the bladder. I was, however, satisfied by these examinations that some bulky body existed, as I could feel it distinctly pressing downwards, and occupying a considerable space in the lower part of the pelvis. I concluded that this must be the cause of the incontinence, or that the *sphincter vesicæ*, or the structure of the urethra itself, was affected.

About this period, I read in your Journal a case communicated by Dr Cumin of Glasgow, where he employed the use of the common catheter to relieve the misery occasioned by this distressing symptom, arising, however, from a very different cause; but it appeared to me, that the employment of the catheter, with the means recommended by the Doctor for retaining it in its situation, was to the patient troublesome in its application, and uneasy and inconvenient in its use. Upon mature consideration, I conceived that it was possible to contrive an instrument which would remain in the bladder without the assistance of bandaging or machinery of any kind, and I came to this conclusion, from considering the structure of the female urethra and neck of the bladder.

I accordingly got an instrument made of bone, four inches and a half in length —at its point, exactly of the dimensions and structure of the old female catheter, that is, it was both round and straight, and as it proceeded upward it gradually enlarged, until it became rather more than double the size, and then abruptly, but obtusely, again assumed its smallest size. The distance between this change of shape, and the point was fully three inches. The remaining part was terminated by a trumpet mouth, with a silver stopper, at least half an inch long, and firmly fitted. The instrument presented the annexed figure.



It answered my most sanguine expectations. The patient could readily use it herself; it remained steadily in the bladder, without the smallest assistance, in every kind of exercise or motion. She wore it almost constantly night and day; and it afforded the most complete relief to her distressing situation, being enabled to retain the urine without any inconvenience until it exceeded half an English pint. The only discernible feeling different from the natural evacuation of urine, was a slight tingling, or rather quivering, about the neck of the bladder when the urine was nearly all discharged, which she attributed to that viscus coming in contact with the end of the instrument, which, I have no doubt, was the real cause.

The instrument, as originally constructed, having so completely answered every purpose which I intended, no alteration has been, or seems to be necessary. The extent, figure, vascular, somewhat elastic and contractile, power of the female urethra, were the principles upon which the instrument so constructed appeared to me likely to succeed. The length of the urethra I supposed to be about an inch and a half, and I allowed for the same extent to pass within the bladder, which I hoped would be sufficient to evacuate all the urine, without irritating that viscus upon the evacuation of its contents, or by coming too readily in contact with its fundus; and the perforations were made nearly to the whole extent of that portion. The size to which the instrument swelled out, and its sudden diminution, were with the view of affording the contractile power of the urethra an opportunity to lay hold of it, and prevent it slipping out, and to give no pain or irritation to the orifice from its remaining, which indication it also completely answered. The remaining extent of the instrument was calculated, not only to allow of its passing some way within the meatus urinarius, but also to extend beyond the labia pudendi, in order to avoid any pressure or friction which could occasion motion in the instrument upon exercise; and the trumpet mouth, with of course its convexity to the body, was with the view of affording less cause of irritation than the usual termination of the catheter, and also to afford greater facility and comfort to the patient in using the instrument, as well as to give its termination additional strength. My reason for its being made of bone or ivory was, that the irritation in passing and wearing it might be as little as possible; and which I thought was likely to be more if made of any metal. Whether this be the case or not, is perhaps uncertain, but at all events, the patient has now continued to use the *same instrument* for nearly two years. The straight and cylindrical shape of the instrument was preferred to the curved and oval form, which seems to be now given to the common catheter, as it appeared to me, a considerable advantage could be obtained if the point of the instrument, introduced into the bladder, could be prevented from pressing upon its neck in any direction; and I concluded that the natural weight of the instrument would keep its point in that situation which would prevent all lateral friction, and nothing but the fundus could possibly come in contact with it, upon the total evacuation of the urine.

These observations bring me naturally to notice the shape now very generally given to the female catheter. I am not aware by whom this alteration was suggested; but I do not hesitate to assert, it is not only no improvement upon the instrument formerly employed, but increases considerably whatever difficulty or uneasiness the introduction of it was attended with. The alteration which I allude to is, that of giving the tube an oblong and flattish form, with its greatest diameter transversely, and a greater curve to the whole instrument. Whoever will attend to the figure of the meatus urinarius will find, that the oval form of the instrument is directly the reverse of what it should have been, as the length of the aperture of the meatus urinarius is perpendicular to the body, and from the extent of the curve, the point of the catheter is apt to press against the fore part of the bladder, the mouth of the instrument being generally much depressed in the evacuation of the urine.

I should certainly prefer the former figure of the catheter to the one I have now noticed as at present in use; but if any change in the form of the instrument was necessary, the direction of the oval form of the tube should be perfectly the reverse of what it is, and the curve also less. But even although this form should have been found more readily introduced, I would not have followed it for my present purpose, as it seems evident that this shape, while remaining in the urethra, must have been attended with more irritation and uneasiness, and it would have entirely failed in answering the other indications.

Before concluding this letter, it may be proper to state, that it is now about two years since my patient left Musselburgh, during which period I have had no opportunity of examining the state of the parts affected; but the following extract from a letter which I received since the preceding part of this communication was written, will suffice to show the happy effects of the instrument. I regret, however, the distance of the patient prevents, on my part, any farther exertion for effecting a cure of the incontinence of urine; and I may just observe, were it found to have proceeded from any fistulous communication betwixt the bladder and vagina, I should have certainly followed the plan recommended by Desault, viz. that of stuffing the vagina while employing any other means of cure.

"In answer to your inquiries, I have, as you know, made use of the instrument almost constantly for the last two years; but since the middle of November last, I have worn it night and day, except for about twenty-four hours *at particular times.* It does not require the aid of bandage, or assistance of any kind, to retain it in its place; but when the bladder is much distended with urine, the instrument then projects a little more. I do not, however, feel any inconvenience from this circumstance, as it holds sufficiently firm to prevent any risk of its coming away even when I walk, nor does a drop of urine ever escape until the stopper is withdrawn.

"The pain which attended my original complaints is now so much better, that the only uneasiness I suffer, is on first getting up in the morning, or after sitting long in one posture, when I feel a good deal cramped, and as if a bulky something was pressing against the lower part of the body toward the left side, but on moving about a little, it goes quite off again. My general health, however, is perfectly good. I have bathed in the sea almost every day throughout this month. I eat and sleep well, and am in every respect much stronger than I have been for some time."

Musselburgh, 9*th June* 1826.

ART. VI.—*Case of a Double Inguinal Hernia on the same side.* By HUGH FRASER, Surgeon Civil Hospital, Gibraltar. Communicated by Mr LIZARS.

S. C., a very stout man, 35 years of age, a native of Geneva, and a strolling silversmith, requested my attendance on the 26th March 1826, at 12 o'clock at night, in consequence of an incarcerated rupture. Upon my arrival at his house, I found that my friends, Dr Smith, of the 23d regiment, and Hospital Assistant-Surgeon Dr Alexander Brown, had been called in an hour before, but that both had failed in the attempt at reduction by the taxis, and were consequently urging an operation. The patient stated, that he had been twice ruptured on the same side within eight months, but that no difficulty was experienced in returning the parts. The present protrusion had taken place at 7 o'clock in the evening, from slipping his foot in the street, and had become immediately strangulated. The case was one of bubonocele. A tumour presented itself, extending from the inguinal aperture of the right side, half way down the scrotum, and dermad of the spermatic vessels. It felt exceedingly hard, and was most acutely painful, being firmly girt down upon the os pubis. Considering the taxis to have been most judiciously applied, and also to have been sufficiently long persevered in, I had no hesitation in agreeing upon an operation, the performance of which was entrusted to me. No persuasion, however, could induce the patient to submit to it, and it was not until 9 o'clock the following evening that he consented; being fourteen hours after strangulation had taken place, by which time the parts were so painfully tumefied, that gangrene was apprehended; but no other alternative existing, I proceeded as follows.

The patient having been placed upon a convenient table, an incision was commenced about an inch and a half atlanto-laterad of the sacral aperture of the inguinal canal, and carried down to the most depending part of the tumour, dividing with one sweep the skin and cellular membrane. Three pubic arteries sprung, but they gave no trouble; and the herniary covering was quickly exposed, without reference to this or to that "fascia." I now, following the recommendation of Petit and Monro *primus*, of not making an opening into the sac, proceeded to insert a thin director under the atlantal pillar of the ring, which was seen to be the portion causing the stricture, and with a probe-pointed bistoury cut it across directly sternad; and, making an attempt at reduction, was gratified to find both sac and gut to slip up with perfect facility. I followed the receding parts with my finger throughout the whole length of the spermatic canal, both apertures retaining their natural situation to each other, until I sensibly run them into the abdomen. Drs Smith and Brown, by actual touch, also satisfied themselves on this point; and the operation was, by several other medical gentlemen present, considered to be satisfactorily concluded. The parts were accordingly dressed in the usual way, and the patient returned into bed, expressing himself much relieved.

11 o'clock A. M.—Two hours have elapsed since the operation, without inclination, or any attempt at stool. Pulse firm, and 120; but the patient is tranquil, and does not complain. Thirty ounces of blood have just been abstracted from the arm, which, with seventy-two drawn off during the taxis, will make 102 ounces lost within the last twenty-four hours. Enemata to be administered, and to take small doses of Epsom salts dissolved in the infusion of roses.

10 o'clock P. M.—Course altogether retrograde. Prognosis death. Belly refuses to answer to any of the varied purgatives tried since morning; and the enemata have brought off only a little hardened matter from the cells of the colon. Ninety-six leeches ordered to be applied over the atlantal ring, where pain is felt, but only on pressure, and not of itself sufficient to create any alarm. The stomach, however, is irritable, with a disposition to singultus, and he vomits at times. Pulse varies from 120 to 130; skin hot and dry; thirst; aspect anxious. In consultation, a gangrenous inactivity of intestine is suspected; and nothing very satisfactory can be proposed. To continue the enemata, and to have calomel gr. iii. every third hour, with effervescing mixture at pleasure.

28th March, 6 o'clock A. M.—Has had no stool, and no sleep in the night; but his sufferings have been little,—nothing like acute pain being experienced. Hiccup established; pulse thready; aspect sunk; and the man has obviously but a short time to live.

He expired without struggle, at 12 o'clock noon,—twenty-seven hours after the operation, and forty-one after the strangulation. Two hours after death, Dr Brown made an accurate examination of the body, and has favoured me with the following report.

"*Sectio Cadaveris.*—A portion of the ileum, about eight inches from its termination in the colon, was found strangulated at the inner-ring. The sac of this hernia was very dense, and intimately connected with the surrounding parts, so much so, that I was not able, by any force I could apply with the fore-finger in the sac, to protrude it more than half an inch beyond the upper angle of the incision made in the operation, though this incision had been prolonged more than an inch in the direction of the inguinal canal after death. In short, this sac had every appearance of being of long standing. Immediately below the internal ring, or rather the opening of the above described sac, and separated from it by a "*bride*" a *line* in breadth, the peritoneum formed three or four very loose transverse folds, and the finger could easily be passed up from the wound, on the mesial and central aspect of this hernia, so as to protrude in the abdomen, and raise the loose folds of peritoneum before it. From the facility with which the finger could be here passed into the abdomen, it would appear that the hernia reduced in the operation had obtruded itself at this point, and that the sac containing the portion of ileum had not approached nearer the external ring. The piece of intestine, about three inches in length, lodged in this sac, was not gangrenous, but highly vascular; and the peritoneum all round showed, to a considerable distance above and below the point of strangulation, marks of inflammatory action. The internal ring was about five-eighths of an inch in diameter, and three inches from the external. This was clearly an example of double rupture, where both commenced at nearly the same point, and both observed the common dermal relation to the spermatic and epigastric vessels."

Remarks.—The relation of this case demonstrates two perfectly distinct herniæ to have existed, each following as near as possible a course in the same inguinal canal. One was of old standing, probably coëval with the patient's first rupture eight months ago, and had extended itself only a little *way* into the atlantal border, or "bride" of the atlantal aperture, where its sac contracted a very firm adhesion to the sacral margin of the transversalis and aponeurosis of the internal oblique muscle, so as to resist the finger forcing it.

The other, which was operated for, had descended on the sacral surface, and a little to the mesial aspect of the above; and having traversed the spermatic course as low as the testicle, became incarcerated at the atlantal pillar of the ring. The case so far appears an important one, as I believe analogous appearances to be rare.

It is one well calculated, in a practical point of view, to direct the attention of junior operators to a state of parts, which they may, in cutting for hernia, occasionally expect to meet with, and to cause a fatal termination to a case, of the issue of which they had, in every other particular, entertained a promising prognostic.

Authors in treating of this disease, so far as I know, do not seem to have insisted on this variety. Scarpa, by Wishart, relates a case somewhat similar; but I do not find that Lawrence says much on the subject.

Scarpa's case was a double rupture, but it had this material difference, that one of the ruptures was formed by the descent of the viscera into the vaginal coat of the testicle; or, in other words, it was an example of congenital hernia, complicated with fresh strictured protrusion, an occurrence not by any means so uncommon.

" Petit," says Scarpa, " was of opinion, that inguinal hernia sometimes passes out, not properly speaking through the ring, but opens itself a passage through the texture of the aponeurosis of the external oblique, sometimes on the one, sometimes on the other side of the ring, He mentioned, that he observed twice this species of inguinal hernia, about the size of an olive, accompanied by the most severe and dangerous symptoms. Another example of this kind has been related by Jouille. However," replies Scarpa, " none of these three observations have been proved by the anatomico-pathological examination, the only means of establishing, with certainty, the identity or truth of these and other similar facts. Nevertheless, some writers of surgery do not hesitate to ascribe the origin and formation of double inguinal hernia on the same side to this combination of circumstances." He goes on further to say, that he does not deny the possibility, in some rare cases, of a double rupture forming in this way; but he affirms, that it is certainly not the usual manner in which double inguinal hernia of the same side is formed. " For, in opposition to the three cases just quoted, appear a very considerable number, which evidently prove that double inguinal hernia on the same side is a combination of common inguinal and of congenital hernia, both protruding through the inguinal ring on the same side," &c.

From this paragraph it appears, that Scarpa considers the probability of a double rupture forming in the manner described by Petit to be extremely problematical. However, that the one related bears a close analogy to Petit's description, admits of no doubt. It may be asked, was there no tumour or other rounding observable at the atlantal aperture, indicating the existence of the hernia in question? The parietes of the abdomen were loaded with fat to the depth of two inches at least, and any preternatural enlargement that might have here existed, was totally obscured from this cause.

Gibraltar.

ART. VII.—*Cases of Preternatural Apertures.* By JAMES SYM, Surgeon, Kilmarnock.

Case 1.—*Mesocolic Hernia.*

J. K., aged 65, a postillion, awoke, between 12 and 1 o'clock on the morning of the 28th of April 1825, with pain in his bowels, most violent in the left side, and stretching across the umbilicus. Had an inclination to go to stool, but attempted in vain to force an evacuation. His efforts aggravated the pain; and when he returned to bed, he sat with his body folded forward, his right fore-arm across his abdomen, and his hand firmly pressed upon his left flank. This was the most tolerable posture he could find; and repeated attempts at procuring an evacuation were accompanied by increased uneasiness. Hot fomentations and a sinapism were employed; and at 5 o'clock, his pains were so much mitigated, that he desired his family to retire to rest, and he himself slumbered a little. He soon awoke, however; and by 8 the pain had become as severe as formerly. I saw him at 10. I found his pulse natural, his skin cool; he had vomited none, and the pain was alleviated by pressure. Conceiving the disease to be spasmodic, I bled him to 10 oz., and prescribed pills of opium, calomel, and James's powder; after which the pain in a great measure subsided. It increased again at night, though not to the same degree as before; and during the 29th, he had a good deal of uneasiness, without any violent pain. I took from his arm six ounces of blood, which, as well as that taken on the preceding day, was neither cupped nor buffy. A dose of calomel, followed first by castor oil, and afterwards by a purgative glyster, having proved ineffectual, I caused two other glysters to be administered. During their injection, he suffered severe pain, and they produced a very scanty discharge of feculent matter. On the 30th, the pain had completely left the abdomen, having given place to a sensation of heat in his stomach, accompanied by vomiting. I had already examined him for hernia; and I now repeated my examination very carefully, but could discover nothing like a herniary tumour. He said he never had been affected with that disease. His abdomen was neither tense, nor tender upon pressure; and it was only when he received injections, which were occasionally repeated, that he now complained of pain. I supposed that this might be owing to awkwardness in the manner of introducing the glyster-pipe, and, in the evening, I administered a quart injection myself, which produced a discharge of bloody mucus, destitute of feculent matter. The distress he suffered under my hands was on this occasion so great, that no more injections were prescribed. I ordered the upper part of the abdomen to be covered with a large blister. On the 1st of May, the matter vomited became stercoraceous. He said his stomach felt excessively hot; but this was the only description of pain he suffered, and he still continued free of fever. The vomiting was not in the smallest degree restrained by effervescing draughts, carminatives, and opiates. His bowels, after having withstood for several days the action of calomel, colocynth, and croton oil, which had been employed in various combinations, seemed at length, on the 3d of May, to relax spontaneously, and discharged large quantities of a tarry matter, which congealed immediately after being evacuated. He sank rapidly for three days under the vomiting and purging; and although cordials were now given in abundance, this double discharge soon exhausted his powers, and he died on the 6th of May.

May 7th.—*Dissection.* Stomach and small intestines exceedingly inflated, and slight streaks of vascularity on their surface. In the left epicolic region, the sigmoid flexure of the colon passed over a dark-coloured tumour, which was found to consist of a loop of ileon six inches in length, the blood-vessels of which were in the highest state of injection; but it did not appear from its texture to have become gangrenous. It had passed through a round aperture half an inch in diameter, which perforated both layers of the mesocolon, and the margin of which was a well-defined circle, and so firm, that a finger could be thrust forcibly into it without tearing it. The necks of the gut, where compressed by this ring, were much narrowed, and the six inches which had passed through contained air. The mucous membrane of the incarcerated portion was very red, and that of the adjoining parts of the ileon somewhat more so than natural. No ulcers could be detected. The coats of the intestines were more easily ruptured than usual. The gall-bladder was filled with a deep red, almost black fluid, resembling dark-coloured blood, but producing a yellow stain upon linen.

Observations.—The only pain which accompanied this hernia was at its commencement, before inflammation could be supposed to have established itself in the incarcerated gut; and it ceased after the peristaltic motion of the intestine was reversed. In an ordinary case of strangulated hernia, a portion of parietal peritoneum is dragged from its proper connections, and protruded in front of the tumour. The air confined in the misplaced gut also suffers pressure from the action of the abdominal muscles upon the rest of the intestinal tube, as well as from the peristaltic action of the intestines themselves. Now, in mesocolic hernia, it is only by the peristaltic action that air is forced into the incarcerated gut, and there is no portion of parietal peritoneum subjected to violence. Hence the pain subsided as soon as vomiting commenced, because then the inordinate efforts made by the ileon to push forward its contents against the obstruction, terminated in a reversion of its motion. The relief obtained by compressing the left side must have arisen from the peristaltic action of the ileon and colon being thus restrained, and the pain of the injections, from the movements of the colon being thereby excited, by which the strangulated gut would be dragged and the aperture narrowed. After the inflammation had proceeded so far as to overcome the muscular powers of the strangulated portion, its neck became sufficiently relaxed to yield to the *vis a tergo* of the sound intestine, and black bile was transmitted in large quantities.

Case 2.—Perforated Stomach.

J. T., aged 23, consulted me at the end of May 1825, on account of stomach complaints. In his childhood, his digestive functions had been deranged to such a degree, that his life was despaired of. He had ever since been dyspeptic; and, of late, his complaints had increased in violence. When he applied to me, his symptoms were, pain of stomach, most severe after meals; habitual costivenes; dark-coloured stools; and the right side of the epigastric region was tender upon pressure, but not tense. I gave directions for the regulation of his diet, and prescribed pills, consisting of equal parts of the mercurial and compound rhubarb masses. I saw him next at 2 o'clock A. M. on the 2d of July. He had experienced no relief from my prescription; and although his complaints had not prevented him from travelling upon business, during the month of June, to Edinburgh, Argyleshire, and other parts of Scotland, still they had caused him to fall off considerably in his person; and they had occurred with such violence during night, that he enjoyed little sleep. On the 1st of July, he had dined more fully, and appeared in better spirits than usual: but in the evening, he was observed by his workmen to place his hand frequently upon his stomach; and he remarked to one of them, that he thought he could not live long. About 11 o'clock, he was seized, soon after going to bed, with a severe attack of pain in the epigastrium, which he considered cramp, and for which he employed, as he had been wont to do, hot fomentations, and a cataplasm of spirits and pepper. These remedies, however, proved unavailing; and, after they had been persevered in for three hours, I was called. He complained to me of extreme pain and drawing together of the stomach, and unquenchable thirst. He had vomited severely, and still continued to belch up flatus, and to retch; abdominal muscles rigidly contracted; pain relieved by pressure; pulse neither sharp nor much accelerated; tongue clean and moist. I bled him to 16 oz.; prescribed a full opiate; and ordered a large sinapism to be applied over his stomach.—8 o'clock A. M. No improvement, except cessation of vomiting; blood not buffy; and still no decisive symptoms of inflammation. I ordered a warm bath, and, thereafter, a dose of castor oil amongst cinnamon water, to be followed by a purgative enema.—6 o'clock P. M. Bath only afforded momentary relief; castor oil did not operata; and scarcely any feculent discharge returned with the glyster; pulse 124, sharp; pain extending, since the afternoon, over the whole abdomen, which is now tense, full, and impatient of pressure; thirst urgent; tongue still clean and moist. I bled him to 30 oz., by which the pulse was only rendered smaller and more rapid: prescribed a dose of Epsom salts, with infusion of senna, and ordered the blisters to be occasionally repeated.—July 3d, 2 o'clock A. M. All the symptoms greatly aggravated; pulse 140, very small; blood buffy, but not cupped; bowels not moved. Two very large glysters being administered, returned somewhat augmented in quantity, and having a slightly feculent odour. Prescribed 5 grains of calomel, and ordered a large blister to be applied over the abdomen.—4 o'clock A. M. I was sent for in haste. I was told that his medicine had been about to operate; that he had got out of bed, and fainted, passing during the faint a green stool; and that, when replaced in bed, he had drawn two or three deep inspirations, and sunk into another faint, from which he could not be roused. I found him dead.

Dissection.—Twenty-eight hours after death; weather hot. Neck and depending parts much discoloured and emphysematous; abdomen tympanitic. A little air, and a considerable quantity of a muddy fluid, in the peritoneal sac. The fluid resembled gruel. Substance of liver of a dark colour, and a pretty firm coat of lymph upon its surface. Gall-bladder distended with bile. Peritoneum, both of the parietes and small intestines, of a brownish red colour, from vascular fulness, deepest in the right-side and hypogastrium, and not extending to the stomach, which was of its natural colour. Small intestines considerably, and stomach excessively, distended with air, which, on applying pressure, escaped through the coats of the latter, near its lower extremity. On opening the stomach, it was found completely empty, and there was an aperture, the size of a sixpence, in its lesser curvature, near the pylorus. The margins of this aperture were regular, white, and very firm, resembling ligament; they were somewhat thickened, and seemed to consist of the coats of the stomach in intimate cohesion. There were neither cicatrices, nor ulcers, nor inflammation, observed in any other part of the mucous membrane of the stomach, which was all carefully examined; and several portions of the intestinal canal being slit up, their mucous lining appeared equally sound. The aperture was in that part of the stomach which is connected with the cellular tissue of the small omentum, shreds of which hung loose around the outer surface of its margin, having afforded, by their rupture, a passage for the liquid contents of the stomach, through the foramen of Winslow, into the abdomen. The coats of the small omentum, and the cellular substance between the stomach and liver, were inflamed, but not much condensed.

Observations.—From the smooth, regular, and sound appearance of the margin of this aperture, we are warranted to conclude, that it had not been of recent formation. It is probable that an ulcer had formed in the site of the aperture, during that violent affection of the digestive organs, which this patient laboured under at an early period of his life; and that the stomach complaints, to which he had ever since been subject, were, at least in part, owing to the deficiency of the mucous and muscular coats at the perforated spot, and to their place being supplied by the cellular tissue of the small omentum, which is not adapted to bear, without irritation, the contact of foreign bodies. By long exposure, however, it would become, to a certain degree, callous to the impression of his food; and it is probable, that, some time before he consulted me, in the month of May, repeated distentions of the stomach, by flatulence, had gradually torn up the old adhesions, and exposed a new portion of the omentum to the action of the aliment. This had become inflamed; and the inflammation having propagated itself along the small omentum, had spread over the hepatic peritoneum, and determined that secretion of lymph, which presented itself at our dissection. Had things been permitted to remain undisturbed for a few weeks, the inflammation would have again induced, as it had probably done when the aperture was first formed, a sufficient condensation of the internal tissue of the omentum, to have secured him against the accident by which he lost his life. But, unfortunately, before the inflammatory process had perfected its office, a fit of indigestion inflated the stomach with air to such a degree, that a spasmodic contraction of the muscular coat was excited; and the loose cellular tissue of the omentum, being unable to withstand the force by which it was assailed, gave way, permitting the fluid contents of the stomach to gain access to the sac of the peritoneum. There they, of necessity, excited a high degree of inflammation; but even this had not advanced to that stage at which it usually proves fatal. The immediate cause of death seemed to be syncopè. In raising his body from the recumbent to the erect posture, the liquids flowed down along the surface of the peritoneum, which was acutely sensible from inflammation, and the shock communicated thereby to the nerves, produced a fatal syncopè—the permanency of the irritation preventing the system from rallying from a cessation of vital action, which would only have proved temporary, had the cause exciting it been of temporary duration.

Case 3.—Phrenic Hernia.

On the 2d of February 1826, at 3 o'clock P. M., a male infant, 23 months old, was sitting upon the steps of a stair, amusing himself with an onion, and in perfect health. His mother took the onion from him, lest he should swallow it, and he fell a crying. He got up and followed his mother into the house, and became appeased for a few minutes; after which, he again burst out into a very violent fit of crying. With one hand he held up his frock, and directed his mother's attention to his stomach, as if he felt pain there, whilst, with his other hand, he pointed into his mouth. It was conjectured that he had attempted to swallow an onion unobserved, and that it had stuck in his throat. He had continued nearly an hour in this paroxysm of crying, tossing himself violently in every direction, when I saw him. It was ascertained that he had no other onion in his possession than that which his mother had taken from him. His pulse and breathing were very rapid. His lips livid; his general countenance red, but it also had been livid at the commencement of the paroxysm. Abdominal muscles rigid; and the bowels seemed to be flatulent.—I had him placed in a warm bath, in which he remained, without faintness, a quarter of an hour. The agitation and crying immediately subsided. His bowels were evacuated by an injection, after which he had ten drops of laudanum.—I saw him again in the evening. No return of the crying, and apparently less distress. Inclined to lie upon his belly, and seemed exhausted. Pulse feeble, 160. Lips still somewhat livid; cheeks red; and mouth encompassed by a striking paleness, which extended to the nasal trait, and pervaded the entire chin, being abruptly defined from the red of the cheeks. Suspecting that worms had got into the stomach, and occasioned irritation there, I prescribed a dose of calomel at night, and an injection in the morning. I also caused the bath to be repeated at bed-time. No worms were passed; yet he seemed less distressed next morning, and did not cry. His countenance had still the same singular appearance, marking strongly gastric irritation, and he had ground his teeth incessantly during night, which he had never been observed to do before. When asked what was the matter with him, he still pointed to his throat by his mouth; and he had slight approximations to retching, but he did not vomit. I was fully persuaded that worms had entered the cardia, and I ordered a drachm of oil of turpentine to be given immediately, and in two hours an emetic, consisting of three drachms of antimonial and an ounce of ipecacuan wine, of which two tea spoonsful were to be given every five minutes till it began to operate. He used the whole of the mixture, drank a considerable quantity of tepid water, and had his fauces tickled with a feather, which caused slight attempts at retching, but he did not vomit. He became much oppressed, began again to toss and cry as at first, and died in the course of an hour after finishing the emetic.

February 4. *Dissection*—Eighteen hours after death. Intestines beautifully white—not a spot of discoloration. Left side of diaphragm convex on its abdominal aspect, tense, and tympanitic. This was occasioned by the stomach having entered the chest by an aperture in the left side of the tendinous portion of the diaphragm. Left lung compressed to a very small bulk, and its upper lobe destitute of air: its under lobe, which lay in the hollow along the side of the spine, crepitated a little, and no part of either lobe was hepatised. Right lung perfectly sound. Heart completely empty in all its cavities, and pushed to the right of the sternum. Thymus gland about three inches long, and one inch broad, and exuding, as usual, a milky fluid, when cut across and compressed. Small intestines greatly inflated, but colon rather contracted.—The whole of the stomach, from the pylorus to the cardia, with the exception of a small portion to which the spleen was attached, had slipt into the thorax, carrying along with it part of the omentum. It was distended with air, and contained a small quantity of water, and some half-chewed morsels of onion, which he had eaten at dinner. The aperture was situated about an inch from the foramen of the œsophagus, to the left of it, and a little farther forward from the spine. It was about two inches in diameter, and a well-defined circular margin anteriorly, but posteriorly the omentum originated a short way within its lip from the pleura of the diaphragm. At the anterior margin, the pleura and peritoneum of the diaphragm were continuous; and when stript off and held up to the light, not the slightest mark could be discovered at their junction. Behind the posterior margin the pleura was continuous with the peritoneum of the great omentum, which presented a valvular arrangement, shutting up completely the aperture when the greater curvature of the stomach ascended toward the ribs.

Observations.—There can be little doubt that this malformation was congenital, and that the hernia of the stomach had only occurred twenty-four hours before death. While sitting upon the stair, his abdomen was compressed by his thighs; and while sobbing in this position, a deep and sudden inspiration forced the diaphragm against the stomach, which was prevented from retreating before it by the confinement of the abdomen, and which, therefore, slipt through the preternatural orifice. Had the stethoscope been applied in this case, I believe we should have made an erroneous diagnosis. We would have concluded, that the left lung had been ruptured, and the left side of the thorax filled with air, unless the stomach had still retained so much of its natural action as to emit that borborigmous sound, which we hear on placing the stethoscope over an intestine. Had this been the case, a suspicion might have been entertained of the nature of the accident, and one would have felt disposed to exhaust the stomach of air by means of a pump, having a long gum catheter for its tube. This, if rendered flexible by heat, would perhaps have taken the curve of the apertures, and, by exhausting the stomach, the volume of that viscus would have been so much diminished, that the muscular action of the cardia and duodenum might have proved sufficient to withdraw it from its incarceration.

Kilmarnock, 1826.

Art. VIII.—*Cases of Cæsarean Section and Extirpation of the Uterus, performed in Germany.*

History of a Cæsarean Operation, by N. Meyer, Doctor of Medicine and Surgery at Minden. (Journal für Geburtshülfe, &c. von A. Elias von Siebold, Professor of Midwifery to the University of Berlin, Jan. 1825.)

On the 26th of July 1824, at nine in the morning, I was requested by a midwife to afford her my assistance in a case of difficult labour. On inquiring into the state of the patient, and the progress the labour had made, I obtained the following particulars. The patient was the wife of a joiner, 28 years of age, and in her first pregnancy. During the former part of her pregnancy the woman had felt herself pretty well, but, in the two last months, she had been constantly troubled with severe pains in the loins, probably arising from the state of the pelvis, which was very small. The midwife had been in attendance since early the day before, and stated that the woman had experienced the most severe labour pains, which had considerably promoted the progress of parturition, although the mouth of the uterus was still very high up, and scarcely dilated to the size of a crown piece. The membranes, however, were ruptured, and the waters had escaped. The head of the child was situated in the upper part of the pelvis, where it formed a very striking projection, and notwithstanding the severe labour pains, which had continued for thirty-six hours, the head had not descended. I immediately went and examined for myself into the state of the woman. I found her sitting on a labour-stool, and was convinced, at the first sight, that there existed an important impediment to labour by the formation of the pelvis. The woman was naturally small, and had suffered most severely from rachitis in her younger days. The thigh bones, the tibia and fibula of both legs, as well as the bones of the upper extremity, were curved in a particular manner, and at the upper part of the back there was a projection of considerable size. The external examination of the patient gave the following results:—The *os sacrum* was bent so much inwards, that the fist could be laid in the hollow which it formed. From this point the vertebræ proceeded obliquely upwards without an inclination to either side, but towards the superior part of the dorsal region they projected outwards (backwards,) and formed the protuberance just mentioned. The pelvis did not appear to be stronger or higher on one side than on the other. The contraction of the smaller diameter of the pelvis, produced by the direction and situation of the sacrum, was so considerable, that, from the internal examination, the delivery of the child appeared impossible, and the probability of being able to introduce the hand extremely doubtful.

The abdomen considerably projected over the pubes, and it was very evident that no part of the child was in the lower part of the pelvis, although the woman assured me that the abdomen, on the escape of the waters, had considerably diminished in size. From the appearance of the abdomen, and the striking projection on the right side, which arose from the posteriors of the child pressing against the integuments, I conceived that the child lay transversely in the pelvis. The woman was not in the least desponding, but, on the contrary, appeared in good spirits, and begged of me to deliver her by the same operation by which I had so successfully delivered her neighbour a few years before, that she might be freed from the severe pains in the pelvis which she had suffered from the commencement of labour, and which she was now no longer able to endure. As far as related to the movements of the child, they had for some time ceased, although they had been before very frequent, and from this circumstance the mother concluded that the child was dead. The pelvis was not very deep, but considerably bent forwards. On an internal examination, the fore part of the child was found pressed into the conjugate diameter of the pelvis (a space scarcely exceeding two inches ;) there could also be felt a round projection, which had been confounded by the ignorant midwife for a tumour of the head. It was, however, very soon found that it was the right elbow, considerably swollen. If, notwithstanding the important swelling of the limb, it were possible to push it back, in order to turn the child, still the idea must be given up on account of the narrowness of the conjugate diameter, for the hand even could not be introduced, and, consequently, the turning of the child was not possible. Under these circumstances I conceived that the delivery could only be effected by the Cæsarean operation, which I stated to the patient, together with the prospect of success afforded by the case to which she had before alluded, and in which I had performed the same operation.* I then withdrew to get every thing ready for the operation, and requested the assistance of Dr Consbruch and Dr Diederich. It was about 11 o'clock P. M. ere every thing was got in readiness, when I proceeded to the house, accompanied by the two gentlemen above-named. A very accurate examination, both externally and *per vaginam*, was instituted by these gentlemen, after which they came to the same conclusion, that delivery could only be effected by the Cæsarean operation.

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* Siebold's Journal, vol. iii. part ii. p. 227.

Operation.—After proper means had been taken to empty the rectum and the bladder, the incision was commenced a little below the navel, and continued through the linea alba to a little above the symphysis pubis. An incision was then made without any difficulty through the uterus; but at this step the placenta was divided an inch and a half in length: this, however, caused no bleeding of consequence. The back part of the child lay towards the right side, and opposite to the incision; the feet were readily laid hold of, and the child was extricated without any difficulty, excepting that arising from the right arm being squeezed into the conjugate. On the removal of the child from the uterus, sudden vomiting came on, which caused a protrusion of the intestines; they were, however, quickly replaced. The uterus soon contracted, and the separation of the placenta required very little force. After the effused blood was soaked up, the outer integuments of the abdomen were brought together by sutures as rapidly as possible, excepting just at the symphysis, when there was a small opening left for the discharge of matter. I may here remark, that in such an operation sutures are indispensable. Straps of adhesive plaster were applied, and the patient was put to bed. The pain in the pelvis still continued, though not quite so violent, and the disposition to vomit was considerably diminished. The patient took a little wine after the operation, and soon showed an appetite for some light soup, which she took with considerable relish. The child when removed from the abdomen showed no signs of life, and every possible means were tried to reanimate the child, but in vain. The child was strong and well-formed, and had no defect whatever, excepting on the arm which was pressed into the conjugate diameter, which was of a blueish colour, and considerably swollen.

On the evening of the operation the patient found herself tolerably well; the bandage and dressings were in good order; the lochial discharge had commenced; the urine was voided without any difficulty; the pain in the wound was inconsiderable; and the pulse was very slightly accelerated.—July 27, A. M. The woman slept for several hours during the night. With the exception of the pains which still continued in the region of the sacrum, the patient found herself pretty well. There was a slight bloody discharge from the bottom of the wound; the lochia was quite natural; a clyster was given, which was immediately followed by a copious evacuation.—28th. The breasts to day were considerably swollen; the pulse was frequent; the belly was not distended, and, on gentle pressure, was not painful. The urine and lochial discharge were natural; the wound was not painful, and, as far as could be observed, had a good appearance; from the lower part of it proceeded healthy pus. The pain, however, had become more frequent, and the feel was exactly the same as if a mouse was constantly gnawing in the lower part of the abdomen. The patient had not had any stool since yesterday, and therefore the clyster was ordered to be repeated. About three in the afternoon, I was sent for in a great hurry to come to the patient. At twelve she took some broth, and then found herself remarkably well; but at half past two she was seized with shivering and vomiting, and with a sense of coldness in the sacrum, which extended up the whole of the spinal marrow to the neck. The pulse, which before had been strong, was now become quite sunk, small, and fluttering, and the countenance of the patient indicated that a most important change had taken place. No alteration had occurred in the state of the wound, nor in the state of the lochial discharge, and the pain in the sacrum had quite left her. The disposition to vomit was very great, for which I prescribed some saline medicines and a clyster. She continued, however, to sink, and in the evening she died. I was extremely anxious to investigate the cause of death, which appeared to me very obscure, and early on the next morning I proceeded to the examination of the body.

Inspectio cadaveris.—The integuments of the abdomen had a natural appearance, the wound was easily separated, and showed no diseased appearance whatever. The uterus was of the size of a goose's egg, and lay in its natural position; the bladder was half full of water, was not in the least connected with the wound of the uterus, and exhibited no traces of inflammation in any part of it. The intestines lay on both sides of the uterus and were not inflamed. On raising them there was no collection of pus to be observed in any part of the abdomen. The uterus itself had, in the course of the incision, and on the whole of its anterior surface, a deep red colour, which on the sides and the posterior part was less apparent. The edges of the wound of the uterus were slightly attached to each other, and on separating them, there was found an oval spot, two inches in length, just above the mouth of the womb, considerably inflamed, and that part corresponding to the promontory of the sacrum was also equally inflamed.

History of a Cæsarean operation performed on the living subject. By Dr J. P. A. Echelberg, Wesel. (Siebold's Journal, id.)

Elizabeth Kempten, æt. 36, resident in the village of Drevenack, about two leagues distant from Wesel, had enjoyed, from the time of her birth to her marriage, which took place in 1810, uninterrupted good health. She was put to bed of her first child in March 1811. The delivery was quite natural, and, in a few days after, she was able to get up and go about her household affairs. The second confinement followed in March 1813, the third in July 1816, and the fourth in October 1818. Each delivery went off exceedingly well, and from the second and third she recovered equally as quick as from the first. After her fourth child she became unwell, and was seized with rheumatic attacks, which confined her to bed for a year and half. When she had recovered so far as to be able to get out of bed, her body was so much bent forwards that she could not hold herself upright. She was also extremely weak, and unable to attend to her domestic concerns. Under these circumstances, she again became pregnant towards the end of the year 1822. It was expected that, on account of her previous weak state, this would be attended with serious consequences, but in the course of the following year she recovered her health so far as to be able to resume her usual occupations. On the night of the 20th of November labour pains commenced. They were exceedingly severe, but left her in the course of the following day, at which period the waters escaped. The woman who had attended her in her former labour, found things quite different from what they were in the other labours, and therefore, on the morning of the 21st, I received a request for my attendance on Madame M——. On my arrival at 8 o'clock in the morning, I found the woman labouring under most excruciating pain in the region of the sacrum. On examining the woman I was surprised to find such a contraction and malformation of the pelvis, which very soon convinced me that a delivery in the natural way, even by the perforation of the head, was quite impossible;—the conjugate diameter scarcely amounted to two inches. Under these circumstances I determined on the operation, which was performed in the usual way, without any difficulty, by Mr Hartmann. In the night after the operation, one of the sutures of the wound gave way, and the intestines protruded; these were, however, soon replaced, and a fresh suture applied. The woman soon began to sink, and in thirty-six hours after the operation died. On examining the body after death, the intestines and uterus were found inflamed, together with effusion into the cavity of the abdomen.

Dr Echelberg, alluding to the point deserving of attention in the above case, says, that there are very few cases on record of the Cæsarean operation having been performed on persons who had previously born children in the natural way. He states that he is only acquainted with three cases of the kind; one related by Nägele in his Erfahrungen und Abhandlungen aus dem Gebiete des Krankheiten des weiblichen Geschlechts; another by Henderson in the Edinburgh Medical and Surgical Journal, No. lxvi; and the third by Meier in V. Siebold's Journal fur Geburtshülfe, 3r Band. 2tes stück.*

Extirpation of the entire Uterus. By Landchirurgus L. A. C. Wolff, in Celle in Hanover. (*Gräfe's and Walther's Journal, June* 1825.)

Towards the end of April 1824, Dr Bergmann, of this place, requested me to visit an insane person in the madhouse, labouring under *procidentia* and incipient *carcinoma uteri.* On visiting her, I found that the patient had been insane for some time past; she talked a good deal, and on very obscene subjects. She was about 60 years of age, strong constitution, and had a large and masculine face; the colour of the countenance was of a palish yellow. The uterus protruded completely into the vagina, which it had drawn in part with it. The cervix uteri was scirrhous, and on its posterior surface there were several carcinomatous ulcers. The vessels were varicose, knotty, hardened, swollen, distended with blood, and were concentrated round the neck of the womb, by which this part was considerably swollen. From the mouth of the uterus a yellowish fluid was discharged, whenever pressure was applied. The sides of the vagina were dry, hard, insensible, and covered with large brownish scabs. After ascertaining the state of the case, the only question was as to the plan of treatment to be adopted.

The following points having been investigated, the extirpation of the womb was decided upon. Would an attempt to replace the projecting uterus be attended with satisfactory results, and what medicines ought to be employed to give to the disorganized vagina its natural state? The reposition of the prolapsus was tried several times, but without good effect; the womb, which had for so many years been out of its natural situation, was in part enlarged, and the space which it had before occupied in part diminished. The employment also of different kinds of injections had no effect on the state of the vagina. The question next presented itself, whether such a carcinomatous uterus ought to be replaced? Experience shows, that when the carcinoma arises from local causes, which can be removed, and when no other predisposition to the disease exists, there is some hope of recovery. In this case, where the carcinoma most probably arose from the displacement of the uterus, a cure might possibly take place after the reposition of the part. On the other side, the reposition was attended with several disadvantages; the medicines employed to give tone to the vagina, and the pessary which was employed, all acted as irritants to the uterus. Farther, if the uterus were replaced, the facility of applying the proper means would be diminished. The question now arose as to the extirpation—Is the *extirpatio uteri* an operation of a dangerous nature? For an answer to this, I, of course, was obliged to have recourse to the experience of others who have performed this operation. Osiander, Langenbeck, Palletta, Sauters, Siebold, and some of the older surgeons have performed it, and, in a few cases, with success. But what, then, are the dangers of the operation? The one which most strikes the attention is the hemorrhage. This, however, is only imaginary, as no important blood-vessels are divided, and because the bleeding can be conveniently stopped. With proper care, the injuring of any of the neighbouring organs may also be prevented. The principal danger was the inflammation of the peritoneum, and its consequences. But we perform so many operations where the same consequences are to be feared, therefore, why should we be deterred from operating in this case? What influence might an operation have on the insanity of the individual? now struck us. The result of cases somewhat analogous led us to expect a favourable one. After considering these points, the operation appeared indicated, although a fortunate termination was not very certain, on account of the age of the patient, and the colour of the countenance.

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* There is also another account of the Cæsarean operation being performed, by Mr Berger, Surgeon at Koburg, related in the same Journal, but it presents no peculiar feature of importance. The reasons for the operation were the narrowness of the pelvis, and the state of the child, which was alive. The woman, however, as in the two preceding cases, sunk soon after the operation, and on the third day died. The appearances on the *post mortem* examination did not differ materially from those observed in the other cases. The intestines were covered with a great quantity of coagulable lymph, but the uterus did not exhibit any particular marks of inflammation.

Operation.—On the 5th of May 1824, I performed the operation in the following manner. The patient being laid on one of Stein's labour-stools, and properly fastened, and the bladder and rectum being also emptied, I drew the uterus down with the left hand, and divided, with a convex scalpel, the fundus of the vagina, at the distance of an inch from the orifice of the womb. After the alternate drawing down and division of the parts, I at last reached the cavity of the peritoneum, which I knew by the discharge of a quantity of watery exudation. During this act of the operation, several blood-vessels required tying. The incision was now carefully continued farther up both sides. The Fallopian tubes, the ovaries, and the round ligaments, as they showed themselves at the bottom of the wound, were drawn down, and then cut through, so that they remained in connection with the uterus. At last the disorganized part of the bottom of the vagina was divided, and the operation easily completed. The wound was now brought together by some sutures, the vagina replaced, and into it was introduced a *tampon* sprinkled with some styptic powder. The whole were secured by a compress and a T bandage. On cutting through the vaginal portion, the patient was insensible, and showed no signs of pain; only on the drawing down of the ovaries did she first feel any. After the dressings had been applied, the patient was much easier, and the insanity appeared to have left her. The blood lost amounted to about sixteen or eighteen ounces. We remarked, in the extirpated ovaries, several hydatids of the size of a bean. The neck of the uterus was also elongated, thick and hard.

In the afternoon, four hours after the operation, the patient was sleeping; the madness had disappeared; the abdomen, however, on motion, was very tender, and a slight bleeding from the wound had taken place. She was ordered nitre with oxymel and diluted sulphuric acid in gruel, for drink.—May 6th. Passed the night comfortably, but towards morning pain in the breast, and sense of anxiety came on. The abdomen was swollen, very warm and painful in its whole extent. The pulse was small and quick; thirst very troublesome, and the appearance of the countenance much changed; in short, all the symptoms of violent inflammation were present. The patient continued getting worse during the day, and at 9 o'clock the next day died.

Inspectio cadaveris.—The pleura was inflamed, especially towards the vertebræ; the lungs were natural in their form and structure, of an ash grey colour, several parts inflamed, and adhering to the pleura; and in the pericardium there was a great quantity of fluid. The peritoneum, with all its processes, was highly inflamed, as were the liver, stomach, intestines, and spleen. The bladder was very much contracted in size; the vagina and the rectum were also in a high state of inflammation, the former of which was also very much drawn together. In the lower part of the pelvis were several ounces of thin blood, and in the whole cavity of the abdomen there was a thin, bad-smelling exudation.

Gastro-Hysterotomia. By the same Surgeon.

On the 24th of May, I received from Mr Bock, surgeon in Fallingbostel, the intelligence that he was attending a person who had so small a pelvis, that the delivery in the natural way could not take place, and that the Cæsarean operation must be performed, which he wished me to do. On the following day I visited the patient, who was 26 years old, four feet and half high, with a very large head and trunk. The limbs, however, were very much emaciated, as she had suffered very much from rachitis in her youth, from the effects of which she had never fully recovered. On the 22d of May the pains first came on, and on the 24th the membranes burst; but from the narrowness of the pelvis, it was impossible that delivery could take place, the conjugate diameter being only two inches and a quarter, and the straight diameter only two. The neck of the womb was a little elongated and soft; the mouth was somewhat opened, and the child could be felt, with the face right towards the sacrum. As the principal indication for the operation was the narrowness of the pelvis, I recommended the Cæsarean operation, since no dangerous symptom was present, no considerable emaciation, nor any sign of inflammation. The child was most probably alive, and the person enjoyed a good state of health. In the morning, at seven, I performed the operation, according to the usual rules. (*Vid. Osiander's Grunds. zur Entbindungs kunst, Bd.* 2, p. 81 to 102.) In the incision through the integuments, the bleeding was very slight, but in dividing the thick coats of the uterus, the blood lost was very considerable, and at this stage, the patient complained of most violent pains. The intestines protruded at the end of the operation, just after the fœtus was removed. As soon as the uterus was divided, a great quantity of a greenish fluid made its escape, resembling a mixture of *liquor amnii* and meconium. The extraction of the fœtus was, after the arms were separated, very easy; the head, however, could not possibly be removed first, on account of the manner in which it was wedged in. The placenta, which was fastened at the bottom of the womb, together with the membranes, soon afterwards came away. The placenta was very large; the cord short, thin, and in some places varicose. The bleeding was soon stopped by the application of cold sponges to the parts. After the blood in the abdomen was soaked up with the sponge, the integuments were brought together by two sutures; plasters were applied, and over these a compress and bandage. Immediately after the application of the dressings, the patient felt sick and vomited. This was relieved, for the time, by a dose of tincture of opium; but the patient soon became worse, and on the night after the operation, (the night of the 26th,) the woman died. The child, on its removal from the wound, appeared dead, but by friction-baths, and the blowing of air into the lungs, it was restored to life. It was a boy, weighed nearly seven pounds, and was seventeen inches and a quarter in length. The diameter of the head could not be accurately determined, for want of a cephalometer. The child, however, lived but a very short time. The inspection of the bodies was not allowed.

ART. IX.—*Case of Removal of the greater portion of the Lower Jaw-Bone, affected with an Osteo-sarcomatous Tumour.* By JOHN LIZARS, Surgeon.

THIS patient was sent me by Dr Scott of Cupar, who writes the following history of the disease prior to the operation. "James Thomson, 38 years of age, a stout good-looking man, by trade a mason, of industrious habits and good character, was operated on, about two years ago, by Dr Graham of this place, for a very distinctly formed cancerous tumour of the lower lip, when all diseased structure was removed, and the lip soon healed. Several months afterwards, however, one of the lymphatic glands, at the base of the inferior maxillary bone, began to swell, gradually to ascend during its growth, and to become firmly attached to the body of the bone. It felt very hard, had a rough tuberculated surface, and was soon accompanied with very severe lancinating pains, which have daily increased in severity, and required large doses of opium to sooth them. Within these few weeks it has become rounder, conical, elongated in its appearance, and softer to the touch in its centre, evidently containing matter, and threatening to ulcerate;—the skin being of a purplish hue for some extent over the tumour."

Upon careful examination of the tumour, I found it of the size of a very large orange, having a firm adhesion to the right side of the inferior maxillary bone, and extending downwards and outwards, or sacrad and peripherad, and locking the inferior to the superior maxillary bone, in consequence of its magnitude and fixed position; so that the mouth could not be opened to examine the extent of the tumour internally or mesiad. By the use of a mirror, however, I could perceive that it extended nearly two inches from the lower jaw-bone towards the body of the tongue; and on inserting the finger between the cheek and the bone, the tumour felt hard, and appeared either cartilaginous or osseous, and extended from the symphysis menti back to the angle, and occupied even a little of the ramus. The tumour felt also hard along the base of the bone, and around all its own base, but from this, outwards to its apex, became progressively softer. After careful examination and due deliberation, I replied to Dr Scott, that the tumour appeared to be osteo-sarcoma of the lower jaw-bone, and that nothing but the entire removal of the diseased bone would eradicate the disease, and give the patient a chance of life; for in all the cases I had witnessed, where the tumour had been hammered and chiseled off the bone, the affection had returned, or rather the patient lingered out a most loathsome existence, from malignant ulceration and hectic fever.

Wednesday the 16th August was appointed for the operation, on which day Dr Scott did me the favour to be present; and on the Monday preceding, I requested the opinion of my able friend Dr Poole, respecting the propriety of at once removing the bone, who judiciously observed, that it was my duty to ascertain, during the operation, whether the bone was affected or not. On Tuesday the patient took a brisk purge, which operated well.

The patient being laid on a mattress placed on a table, with his head towards the window, on a pillow, I made an incision through the skin from the mastoid process of the temporal bone around the inferior or sacral aspect of the tumour, embracing at the time every portion of diseased skin, onwards to the symphysis menti. In the region of the sterno-cleido-mastoideus muscle, I made a second cutaneous incision from near the middle of the preceding, downwards or sacrad, parallel with that muscle, to the extent of two inches, in order that I might be able to insulate the tumour with more freedom. I then made a third incision from where the first began, in the region of the mastoid process of the temporal bone, across the ramus of the lower jaw-bone, and along its body to the symphysis menti, onwards for an inch to the opposite or left side. I made this last incision at once into the mouth, whenever I had got beyond the masseter muscle, and immediately made an incision along the lower jaw-bone into the substance of the tumour; and requested Drs Duncan, Poole, and Borthwick, who were present, to examine the condition of the bone, which on inspection they considered healthy. I therefore proceeded to insulate the tumour, by dissecting back the integuments from its posterior aspect, holding the edge of the knife towards the tumour and trachea; but on deepening at the angle of the bone, I found the tumour formed by the bone, and perfectly incapable of being detached from it.

In my attempts at this moment, the tumour burst, and discharged a glairy honey-like fluid, apparently of the mellicerous nature, and I therefore removed the loose portion of it, by cutting towards the trachea. In this stage of the operation, a multiplicity of arteries sprang, and required to be secured—particularly towards the angle of the bone,—and were extremely embarrassing and difficult to be seized hold of. I now resolved on removing the bone; and proceeded by rendering it rudely clean at the symphysis, where I found the disease extended so far to the left side as to involve the four incisive teeth; I attempted to snap the bone at once with Mr Liston's forceps, but was compelled first to use a small saw, in order to weaken it; I next did the same across the middle of the ramus, using first the saw and then the forceps, and cautiously avoiding the internal maxillary artery. I then requested my assistant, Mr M'Crae, a very intelligent young surgeon, to elevate the bone gently at the angle, to enable me to detach it, together with what remained of the tumour, by sweeping with the scalpel, having its cutting edge towards the chin and trachea, which was soon accomplished. The lingual artery, with some others, sprang at this period; but the bone being removed, and there being an open space, they were easily secured. I shall never forget the able assistance which I received from Dr Poole at this period. I now carefully examined every point of surface of this extensive wound, and removed, I trust, every vestige of disease. The long ends of all the ligatures being cut off, and the wound cleanly sponged, the lips were approximated as far as they would admit with thick strong ligatures, and compresses of lint with a four-headed roller applied. The patient was put to bed, and a draught with 45 drops of laudanum given.

Before proceeding with the remaining detail of this interesting case, I shall make a few observations on the operation. Had the other gentlemen been as convinced as I was myself, that the bone was diseased, and had I proceeded as follows, which was my original intention, the operation would have been one of the simplest in surgery; but, from the division of it into two stages, first, the attempt to remove the tumour and save the bone, and, secondly, the ultimate removal of the bone, it was rendered one of the most complex I ever performed. I have more than once been sadly perplexed in removing tumours at the angle of the lower jaw-bone, in consequence of this bone overhanging the tumour, and obscuring the arteries; and it appears to me a subject of consideration for the operator, when large tumours are situated at the angle of the inferior maxillary bone, and burrow beneath it towards the fauces and tongue, either to secure, in the first place, the common carotid artery, or to remove a portion of the bone. In this patient, had the tumour been merely adherent to the bone, and the latter not formed a portion of the former, it would have been next to an impracticability to remove all the diseased structure without wounding more blood-vessels. I felt myself quite paralysed in removing the disease mesiad of the angle of the bone—as every incision wounded an artery, and it was scarcely possible to secure them from their depth. My intention in this operation was to remove the bone, together with the tumour, as I have described in page 45 of Part 9 of the Anatomical Plates; to proceed immediately after the upper incision had exposed the lower jaw-bone, to notch it across at the symphysis and ramus, and then to remove the bone and tumour, by cutting from the sterno-cleido-mastoideus muscle towards the apex of the tongue and trachea. In this way the operation would have been safe, rapid, and easy of accomplishment. In all such operations, the cutting edge of the knife should be held towards the trachea, and the tumour dissected from the region of the carotid towards the trachea, and not, as Langenbeck recommends, from the trachea towards the carotid. In the latter case, the operator may require to secure the same artery more than once, and runs a greater risk of wounding the carotid artery and internal jugular vein; he also cannot repress, with the fingers of his left hand, these important blood-vessels so easily and so securely. In this operation, when I divided the cheek, the facial artery did not bleed, having been obliterated by its passage through the tumour, but the transversalis faciei required a ligature.

Appearances of the Tumour.—The conical portion, which was first removed, has a thick closely compacted cyst immediately beneath the integuments; centrad or interior to this, is a thick cartilaginous stratum; and still more centrad or interior, is a granulated surface, with some long spiculæ of cartilage, forming the parietes of the sac or cyst in which the mellicerous fluid was contained.

The bone, comprehending the four incisive, together with the canine and molar teeth of the one side, has cartilaginous projections where the tumour adhered, and distinct exostoses near the symphysis on the outer or dermal aspect, and on the inner or mesial aspect of the angle; and at all these points it cuts soft like cartilage, and the bone itself is involved in the same softened mass.

Future progress or history of the patient.—The operation was finished and the patient in bed by half past one o'clock of Wednesday the 16th; and at two o'clock he felt tolerably easy. His pulse 100, soft and equable, and the skin also soft and moist. He made signs that he wished some drink, which he sucked out of a tea-pot. He was allowed only toast-water, tea, and the various farinaceous gruels.

At three o'clock he lay very quiet, but the thirst was more urgent, and the pulse at 120, with a cold perspiration; the respiration was natural, and he seemed strong and lively when he asked for drink. At four o'clock he was much the same as last report, but the pulse was stronger. He continued nearly the same until six o'clock, when he slept a little, and awoke with the skin of a natural warmth and moisture; the pulse 120, soft and equable, and having very little thirst. From this to eleven o'clock, he kept slumbering from time to time, with the other symptoms nearly the same, and no appearance of hemorrhage. The opiate was repeated.

Thursday morning, 9 o'clock.—Has passed a tolerable night, sleeping at short intervals, but tossing his legs from out of the bed-clothes, a habit he has acquired. The thirst has been moderate; his skin is cool and soft; pulse 120, soft, and of good strength; respiration easy; makes no complaint of pain, and looks up perfectly collected. To remain quiet, taking the same kinds of drink.—9 P. M. Has continued tolerably quiet all day, slumbering at intervals, and drinking a little from time to time. Pulse 115, soft and equable; skin moist and cool; respiration natural, and does not complain of pain. To have the opiate repeated.

Friday morning, half past 9 o'clock.—After passing a better night than the preceding, he felt more refreshed. Pulse and other symptoms much the same as on the preceding evening. To have a cathartic enema administered, and to take a tea-cupful of infusion of senna every three hours till it operates.

Saturday, 10 o'clock A. M.—The senna has had no effect, and last evening the opiate was repeated. He has had a good night; pulse 100 and soft; skin cool and moist; respiration natural. The wound was dressed, and looked remarkably well; the three angles united for some extent towards the centre of the wound, and no vestige of inflammation, but a healthy suppuration. There is a considerable triangular aperture into the mouth at the centre of the wound, where the flaps could not be approximated. One of the stitches was removed; the wound dressed with lint spread over with simple ointment, a single compress and bandage. The cathartic enema to be repeated, the senna to be continued, and to have the same farinaceous drinks.

Wednesday 23d.—The wound has been daily dressed since last report, and has healed considerably. All the stitches, which were six in number, have now been removed, and the surface to heal is remarkably small, and granulating rapidly.

He swallows with surprising freedom, although there has been since Saturday some pain of throat and tumefaction of face. Both, particularly that of the throat, are nearly removed. He had an opiate every night until Monday, when he, of his own accord, dispensed with it: and has had a cathartic enema administered every morning, his bowels being very torpid. Yesterday he took two ounces of castor oil, which only operated once this morning. The wound dressed as formerly, only with more firm compression, to prevent fluids taken by the mouth rushing out by the wound. To have weak veal broth, together with the farinaceous drinks.

Wednesday, 30th.—The day after last report the wound appeared a little inflamed from the too firm compression, so that it required to be poulticed until yesterday, when two adhesive straps were applied, in order to approximate the sides of the aperture leading into the mouth, which is now much reduced in size. On Friday last, the 25th, he got out of bed. He now swallows porridge, soups, broths, and minced meat.

Saturday, 2d September.—The wound has been daily dressed with the adhesive straps, and the flaps forming the aperture leading into the mouth can now be approximated. The gape is exceedingly small, being about the twelfth of an inch in breadth, and only an inch in length. He feels no pain in any part of the wound, and both the cut ends of the bone are covered with granulations, which have cicatrized. He can swallow any pulpy mess, as those mentioned in last report: he sits out of bed, and walks about his room, and is now regular in his bowels.

Edinburgh, 33, York Place,
2d September 1826.

PART II.

CRITICAL ANALYSIS.

Art. I.—*An Inquiry concerning that Disturbed State of the Vital Functions usually denominated Constitutional Irritation.* By Benjamin Travers, F. R. S. Senior Surgeon to St Thomas's Hospital; President of the Hunterian Society of London, &c. &c. &c.—London: Printed for Longman, Rees, Orme, Brown, and Green, Paternoster-Row. 1826. 8vo. pp. 556.

This work has already attracted much notice among medical men, and has many claims on their attentive consideration, from the great importance and extensive applications of the subject—from the high scientific character and ample opportunities of practical observation enjoyed by its author—and from the substantial value of the information it contains. We shall endeavour to lay before our readers the most important parts of that information; but before speaking of the *facts*, we must be allowed to say something of the *words* used in describing them, and particularly of the prominent and leading term Irritation, which is so much in use, especially in the southern parts of this country—the vagueness of which Mr Travers states as the chief reason of his undertaking the present inquiry—and the meaning of which our readers may therefore expect to find more accurately fixed by him, than by any former author.

In this expectation, we must fairly state, that we think they will be disappointed. After reading the book carefully, reflecting on the phraseology, and comparing it with that used in other recent works, chiefly of the London School, in which the term is a frequent one, we cannot persuade ourselves that we have any more definite idea affixed to it than formerly; and important as are the facts of which Mr Travers treats, and much as we wish them to be generally known and considered, we yet do not wish, nor indeed do we expect, that this word will either occur so frequently, or be used in the same manner, in the common language of practitioners, as it is in the work before us.

Nor is this a merely speculative discussion, or matter of taste. The word is intended by Mr Travers to represent, at least on some occasions, a certain disturbed or diseased state of the animal economy, which he thinks may be clearly and advantageously characterized, and distinguished from all others; and of course the word is intended to be useful, by serving as an index to the knowledge, pathological and practical, which has been acquired concerning that state of the system. Now it appears to us, that even if the pathological facts which he has put together under the head of Constitutional Irritation, can with propriety be classed together and separated from all others, (which, for the present, we leave doubtful,) still the term Irritation is peculiarly ill-adapted for designating them; for this plain reason, that it is in daily use, and must in all probability continue in daily use, in a sense considerably different. If this be so, it is plain that much misapprehension must frequently occur in practice, when the term is used, and when it is intended to apply the knowledge comprised under the term in Mr Travers's writings. We think we can show, that there is some confusion and inconsistency on this subject, even in the writings of Mr Travers himself, and of Sir Astley Cooper, the two authors who make most frequent use of the term Irritation; and if so, how much more is misapprehension to be expected among their followers!

It is clear, that as long as the writings of Haller shall be held in esteem by physiologists (which will probably be as long as physiology itself shall be cultivated and esteemed,) the words Irritability and Irritation, as applied to the phenomena of living animals, will be used in a sense, not only more extensive than the name of any particular diseased state, but more extensive than the word disease itself; they will always be used to denote muscular power, and the excitation of muscular action. These terms are to Physiology nearly as essential as the terms mobility and motion are to Mechanical Philosophy, or as chemical affinity and chemical action are to Chemistry. We are quite aware, that in Pathology and in Practice they are very generally used, and will continue to be used, in reference not merely to healthy action, but to increased or morbidly excited action: but it appears to us very obvious, that their habitual use in Physiology ought to guide their application to the phenomena of disease. In the general language of pathologists and practitioners, we think this has been the case; and we confidently maintain, that any deviation from this principle, in using the words in medical writings, is wrong, and will lead to misapprehension and confusion.

As the word Irritability, in physiological writings, signifies the disposition to take on contraction from the application of a stimulus, there can be no objection to the same term, when applied to the diseased state, expressing an increased or præternatural disposition to take on such action. The term has received, however, another extension in its application to disease; for in physiology it is strictly applicable only to the living actions of muscles, but in pathology and practice it is applied to those of all living parts, and among others of the nervous system; and in like manner, the term Irritation is used very generally, to express the fact of an increase of the living action of any part of the system having been produced, whether that living action be motion, sensation, secretion, or the like. And when it is understood, that, in the application of these terms to disease, the adjective *morbid* may be supposed to be prefixed, we think that no great objection can be made to this extension.

It is quite consonant, therefore, to the usual language of medical men to state, as Mr Travers has done, that "An irritable (*i. e.* morbidly irritable) mind is one easily excited, and over excited in reference to the occasion, whether to joy or anger, fear or pity. An irritable stomach is nauseated by many ordinary articles of diet. An irritable bladder is continually parting with its secretion before the stimulus of distention can be supposed to act. An irritable heart, if quickened by exertion or strong mental excitement, becomes tremulous and palpitating. An irritable skin breaks into a rash from many slight causes of excitement, both of diet and temperature; a plaster which is in others only rubefacient acts on it like a blister. Irritable fauces are slightly sore with a change of wind, or exposure for a few seconds to a current of air; and an irritable retina is distressed to dimness by a full light, and, like the mind, disturbed by the surviving representation of transitory impressions." (p. 8, 9.)

Mr Travers likewise uses the word Irritation exactly in what appears to us to be its general and legitimate sense in pathology, when he says (p. 39,) that "Irritation is the name given to that state which is produced by an extraordinary excitement of the irritability, either of a part or of the system;" and, in regard to local irritation, that when it "is acute and permanent, inflammation ensues, which is proportioned in degree to the severity of the irritation, and the habit of the patient." (p. 42.) In like manner, in the usual language of physicians, the antiphlogistic regimen is said to consist in avoiding irritation; *i. e.* in avoiding everything which, in the state of disease, can act as a stimulus to any of the living actions of the system, to vascular action, to muscular action, to sensation, or thought.

In the usual language of medical men, in short, with which Mr Travers seems in these passages to agree, the word Irritation does not denote any such combination, or succession of symptoms, as is necessary to constitute a peculiar disease or morbid state, such as inflammation or fever, but expresses only the *single circumstance* of excitation of vital action in some part of the system,—a circumstance which occurs to a greater or less extent in almost every diseased state, and cannot be said to be characteristic of any one.

There is, therefore, as it seems to us, this obvious and insurmountable objection to giving the name Irritation to any one diseased state of the system, as distinguished from others, that, according to the usual language of medical men, the name is equally applicable to almost every other diseased state. Mr Travers's own definition of irritation, quoted above, may fairly be said to be applicable to a part of the phenomena of almost every disease that we know: and Sir Astley Cooper's definition, that "Irritation is an altered action excited in the body by an unnatural impression," (Lectures, p. 3.) as we humbly apprehend, might stand equally well for a definition of disease.

Something more definite, however, than their own definitions, is certainly understood by both these authors, as well as by others, on many occasions where the term Irritation is used. Mr Hunter has defined an irritable habit to be "an increased disposition to act, without the power to act with;" and this somewhat enigmatical assertion seems to have been the origin of the more limited, but, as it appears to us, exceedingly ill-defined and variable sense, in which the term Irritation is, not always, but occasionally used by our author and by other modern writers in England: and in which we are told, that it is quite distinct both from inflammation and fever. "Irritation and fever are, in their nature, as distinct as irritation and inflammation." (Travers, p. 40.)

But if we wish to learn more precisely what symptoms indicate or constitute the state of Irritation, as distinguished from inflammation and from fever, we shall find much difficulty. The *definitions* given by Sir Astley Cooper and Mr Travers are, as we have seen, much too vague and general to give us any assistance. If we look for more detailed *descriptions* of the phenomena of Irritation, we are told by Sir Astley Cooper, "that the symptoms of constitutional irritation which follow accidents," are as follows:—"A man complains of pain in his loins, as if from uneasy position: this extends to the back, in the course of the spinal marrow to the brain, occasioning pain in the head; he then becomes restless, and his countenance expresses anxiety; the tongue, at first, is covered with a whitish fur, but as the irritation increases it becomes yellow, and subsequently, in the aggravated stage, has a dark brown coating; loss of appetite, nausea, and vomiting, evince derangement of the stomach; the secretion of the liver is so far diminished, that bile is produced in very small quantity. The secretion of the intestines is diminished and unhealthy, the bowels are constipated, the kidneys secrete but little urine, and it is of a deep colour, the skin has its secretions stopped, and is hot and dry. As these symptoms arise, the pulse quickens, becomes hard, irregular, and ultimately intermittent; corresponding alterations take place in the breathing, it being at first somewhat quicker, and finally much hurried and laborious. The functions of the brain, spinal marrow, and nerves, become further changed; subsultus tendinum is produced; slight impressions on the senses become almost intolerable; the mind is at first hurried, and then the patient sinks into a low muttering delirium. The abdomen swells from accumulated flatus in the intestines, vomiting and purging often both occur, hiccough is produced, and the patient, absolutely worn out by irritation, expires." (Lectures on Surgery, &c. by Mr Tyrrell, p. 10.)

Nearly to the same purpose Mr Travers tells us, "Rigors, nausea, retching, abdominal tension, restlessness, and depression of spirits, with a rapid and feeble pulse, coated tongue, pinched countenance, partial perspirations, and at length delirium, followed by stupor, and laborious breathing, and terminating existence in the space of ten days, are all legitimate signs of *high constitutional irritation*, peculiar to no individual form of local injury." (p. 276.)

But any physician who reads these descriptions of the combination and succession of symptoms thus denominated, will at once say, these are descriptions of Fever, the first taking the form called Synochus, the last that called Typhus by Dr Cullen, the distinction between which, however, is now generally allowed to be only in degree. In another passage Mr Travers distinctly states, "The symptoms characterizing direct constitutional irritation are, in the nervous system, rigor, delirium, convulsion, coma (just the nervous symptoms of idiopathic fever)—in the vascular, *the fever* of phlegmonous, suppurative, ulcerative, and gangrenous inflammation." (p. 48.) How these statements are to be reconciled with the assertion of Mr Travers, that "Irritation, in my notion of the term, *is not fever* under any modification," (p. 493,) we profess ourselves to be unable to understand.

As little can we reconcile the repeated assertion, that Irritation is not inflammation, nor inflammatory fever, with several statements in the section on Poisons; for example, with the following:—"A bold inflammation of the absorbents or their glands, of the cellular membrane or fascia, nay, even of the vein, I consider to be a much less dangerous action than that which affords the first and principal manifestation of its character in its effects upon the constitution. When I have been applied to by students and others labouring under such inflammations, I have regarded them in a favourable light, for if they are to be referred to the inoculation of the wound with a poison, it is a local poison; the *constitutional disorder*, however severe, being such as belongs to *ordinary irritation*." (p. 222.) This is afterwards illustrated by the interesting case of Mr Clifton, (p. 294 *et seq.*) in which there were great tension and swelling, and burning heat with agonizing pain in the arm, red lines in the course of the absorbents, the pulse at 120 and upwards, very full and hard, and a buffy coat on the blood,—in which sixty ounces of blood were taken from the arm, thirty flowed from an incision in the hand, and about 150 leeches were applied, all within five days, with complete success; and in which Mr Travers thinks it obvious that Mr C. "more than once owed his life to the lancet;" and this case, bearing certainly all the usual marks of intense inflammation and high inflammatory fever, is pronounced by Mr Travers to be one of "simple irritation." (p. 322.)

To this we must add, that Mr Travers has described, as examples of direct irritation, many cases of severe burns, injuries, and operations, where death took place by *mere sinking;* the pulse becoming very soon imperceptible, the extremities cold, the head remaining pretty clear, with tendency to stupor but without delirium, and no sign of reaction showing itself from the date of the injury; and farther, that under the head of local irritation, he includes not only a depravation, but a "*suspension* of function in an organ of sense;" not only a vitiation or redundancy, but a *suspension* of secretions; "not only an irregular and involuntary action of muscles," but a "*partial paralysis.*" (p. 40.)

How is the use of the term, in these instances, to be reconciled to his own definition, that "Irritation is the name given to that state which is produced by an *extraordinary excitation of the irritability*, either of a part or of the system?"

Perhaps when they reflect on these different applications of the term, our readers will agree with us in thinking, that our author has not only failed in affixing such a definite meaning to the word Irritation, as can render it an index to any precise or useful knowledge, or to any decided line of practice, but even that he has failed in affixing to it a meaning, to which he can himself adhere.

We are aware that Mr Travers has called on his readers to make allowance for "the difficulty to which all authors on pathology, and on many other subjects, are exposed, arising from the vague and various meaning affixed to terms in common use; and that he trusts to our discrimination and candour to do justice to his distinction between Irritation as an archetype or original disease, and Irritation as a symptom." (p. 493, Note.) But we think it pretty clear, that it is in using it in the first of these ways only, that he has been betrayed into the inconsistencies we have noticed; and, at all events, we would beg most seriously to recommend to his consideration, whether a word that is, and must continue to be, in constant use to express a single symptom or circumstance, occurring in almost all diseases, is not peculiarly ill adapted to express, likewise, "an archetype or original disease."

We are aware, also, of what he has said at p. 39, that "the phenomena of irritation are chiefly displayed in the nervous system, and it is thus pathologically distinguished from inflammation, which belongs to the vascular." But in answer to this, we maintain, with confidence, that, in many of his own instances of direct irritation, for example, in the cases abovementioned, of severe burns and other injuries, "exemplifying the symptoms of direct irritation, in their most aggravated forms," the chief symptoms, and the death of the patients, have resulted from changes certainly occurring in the vascular system. No doubt these changes have, in all probability, been produced through the intervention of the brain and nerves; but the same may be said, with equal probability, of the changes in the vascular system, which occur in inflammation and in fever. And besides, the name that is given to any diseased state, particularly to one of which the pathology is obscure, ought to express the symptoms only, and by no means to prejudge the question of their cause. *

Indeed, it appears to us that our author, in giving a title to his inquiries, has really reversed the process which the strict mode of philosophical investigation, in such cases, requires. The first object, particularly where a new inquiry is undertaken, should be, to ascertain all the facts that are connected with the subject before us; then the facts are to be arranged and generalized; and when this is done, *all the facts being given*, we should look about for generic and specific names to express them; and if, in so doing, we can take advantage of words in common use, and fix more definitely, without materially altering, their meaning, so much the better. But the process followed by our author seems to have been just the reverse; *the name being given*, he has proceeded to inquire, what facts can be comprehended under it; and by what tie can these be arranged and held together? The phrase Irritation, he says in his preface, "has no precise idea affixed to it." If so, it could not be assumed as a guide, and should not have been allowed to influence his investigations at all; but we think it plain, that this obscure and equivocal phrase has hung as a dead weight on his pen, and frustrated many of his attempts at scientific distinction and generalization.

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* In the fatal case of disease from a puncture in dissection, at p. 518, it is stated, that, within forty-eight hours after the puncture, "the absorbent vessels of the arm were raised and *inflamed* to within a hand's-breadth of the axilla. He had a small hurried pulse, with depression of strength and anxiety." Afterwards, it is said that "leeches were proposed on the first appearance of the *inflamed* absorbents, but were not then applied, as the affection of these vessels seemed to be purely the result of *irritation*." (p. 526.) Now, on these passages, we would beg to propose two queries. 1. What is the precise meaning annexed here to the word Irritation, as distinguished from inflammation? and, 2. Is it probable that the distinction drawn in this case was useful to the patient?

We shall conclude these preliminary observations by saying, that we have found nothing in the work before us to alter the opinion we expressed, in regard to the distinction attempted to be established between Irritation and Inflammation, in our review of the work of Dr Butter, viz. that the ground of distinction which seems to be generally (we cannot say always) kept in view is, "that in irritation the nervous system is more peculiarly affected, and with less organic change than in cases of exquisite inflammation; but that this distinction constitutes only a variety, not a different species of disease." The state, or more strictly speaking, the variety of states described under the title of Constitutional Irritation, we apprehend to be so many modifications of the constitutional fever, resulting from injuries,—not more different from the more ordinary forms of fever from injuries, than the different forms of idiopathic fever are from one another, and, indeed, bearing a striking analogy to some of the varieties of idiopathic fever. How these modifications of the symptomatic fever of injuries are produced, will appear, in part, from Mr Travers's observations; but we are clearly of opinion, that even if an unequivocal term could be found for designating them, the attempt to form them into a separate "archetype or original disease," is liable to the very same objection as the divisions of fever into high and low, nervous and putrid, bilious and mucous, adynamic and atactic, &c., which have been multiplied by the ingenuity of nosologists, until all reasonable men have become convinced of the serious impediments to the acquisition and application of useful knowledge, which such minute and arbitrary distinctions present, and of the necessity of recognising "the identity of continued fever under all its modifications."*

After all this verbal discussion, we think our readers will thank us for relieving them altogether of the obnoxious phrase Irritation; and we apprehend there can be no difficulty in laying before them all the material parts of the information contained in this volume, if not without using the term, at least without using it to express, "an archetype or original disease."

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* See Bateman on Contagious Fever.

The volume may be said to treat simply of the constitutional effects of various injuries of parts, the natural actions of which are not immediately necessary to life; or more specifically, it may be said to treat *of the depression, and subsequent excitation of the vital powers, which result from various injuries of such parts.*

The design of treating of the various constitutional effects of such injuries, separately from their local effects or local treatment, is, we think, exceedingly deserving of commendation, not only because it fixes the attention of the surgeon on the essential parts of the process, by which many of the diseased states that fall under his care become dangerous to life; but also because it furnishes the physician with analogies and illustrations, applicable in many instances to the pathology of diseases. When we complain of many of the phenomena of disease being inexplicable, we are too apt to forget that nothing in nature is explicable, except in so far as it admits of comparison with things that are simpler and more familiar. The effects produced in the animal economy by the various causes of diseases are susceptible of partial elucidation only, from the knowledge of the healthy actions of the system, and are hardly susceptible of elucidation at all, from the knowledge of any principles of chemistry or mechanics. But the effects of known agents, particularly of poisons and injuries, on the animal economy, are phenomena bearing a very close analogy to those which occur from unknown or imperfectly understood causes in disease; and when the former are successfully arranged and generalized, they will afford more assistance than all other means put together, in explaining the more complicated changes which give rise to the latter.

Every one knows that much assistance is given to the pathology of diseases of the organs immediately necessary to life, (as the brain, heart, lungs, or air-passages,) by the study of the effects of such injuries in animals, or in the human body, as directly impede or arrest the functions of these parts. But there are many diseases more obscure in their nature, which may be illustrated by the effects of such injuries as act on the vital organs powerfully, or even fatally, yet by a more circuitous and less obvious process; and there is no way in which surgery can render a more essential service to medicine, than by giving a scientific account of the constitutional effects of injuries of this last description. This is what Mr Travers has attempted in the work before us; and although he professes to have left the subject, as yet, unfinished, yet we think he is justly entitled to the praise of having acquired by observation, collected and arranged more information, valuable to the pathologist, in the view above stated, than any other author has done.

His attention has been, as we have said, chiefly, although not exclusively, directed to those cases of injuries, where the constitutional symptoms present this peculiarity, that the reaction of the vascular system is feeble, sometimes imperceptible, but the affection of the nervous system, in general, strongly marked. These cases bear a close analogy to, and illustrate the pathology of, many of the worst cases of idiopathic and eruptive febrile diseases; not only simple fevers, but the whole class of exanthemata. They may be said to illustrate likewise a certain number, and a very important class of inflammatory diseases; those in which, either from peculiarity of constitution, or from causes not yet understood, the general symptoms,—the constitutional effects and signs of the inflammation—do not correspond, either in intensity or in kind, to the amount of local disease; and the usual remedies for inflammation are either not thought to be indicated, or are employed with effects different from those anticipated. If we inquire how it happens that inflammatory diseases, over which we have certainly more power than any others, are nevertheless a most prolific cause of mortality, we shall find, that in a large proportion of fatal cases, there was some anomaly of this kind, in the mode in which the system sympathized with the local disease.

Nor is it the least important effect of Mr Travers's inquiries, that they will fix the attention of medical inquirers for a time on diseased actions, which, although quickly and often inevitably fatal, leave behind them no marks of injury of any of the vital organs discernible on dissection. So much has been said, of late years, of the various genera and species of "organic lesions," that medical inquirers seem disposed to forget that pathology is the science of diseased actions, not of diseased structures. The study of these last is, in fact, theoretically important, only in so far as it elucidates the process by which they have been formed, and the alteration of the functions of parts essential to life which has accompanied them; sometimes as their direct and necessary effect, at other times as an indirect or sympathetic consequence. And this study is practically important, only in so far as the information thus acquired tends to explain and confirm, or to invalidate the efficacy of the means by which these *diseased actions* are thought to be prevented, modified, or controlled. In every case, a process of reasoning is necessary, to enable us to draw any useful inference from the observation of diseased structures; and that observation must be connected, not only with the symptoms recently preceding death, and resulting from the organic lesions themselves, but with the whole train of circumstances that preceded their developement, and with the symptoms that marked the earlier steps of their formation.

That the attention of pathologists may be recalled to these obvious but somewhat neglected truths, it seems to be peculiarly important, to dwell for a little on the class of cases which are the subject of the work before us,—cases of extreme interest, and of urgent danger, in which the actions of the vital organs are either suddenly arrested, or rapidly suppressed by a known cause; but in which examination after death presents no such organic lesions of these organs, as can be supposed to have produced the fatal event,—or even no such appearance as can be distinctly recognised as morbid; in regard to which, therefore, the conclusions of the pathologist must rest on the observation and comparison of symptoms, and of symptoms alone.

We shall first state what appear to us to be the leading facts, regarding the constitutional effects of the different injuries here considered, that are comprised in the work before us,—and the practical suggestions regarding their treatment. In so doing, we shall not follow implicitly the arrangement of our author, which, in some parts, appears to us by no means fortunate; and we need hardly say, that to the words Constitutional Irritation, as occurring in the quotations we shall make, we annex no more definite meaning than simply constitutional affection, without pronouncing on its nature, or even specifying its peculiarities. Afterwards we shall say a few words on Mr Travers's pathological views of the causes of these phenomena.

I. There is a short section on the "influence of contingent circumstances in the production of Constitutional Irritation from local injuries;" and in other parts of the work, there are some additional remarks on the circumstances, both in the nature of injuries, and in the constitution of the patient, by which their constitutional effects are chiefly determined.

1. As to the nature of the injury, the most important principles are comprised in the following sentence:—"Profuse hemorrhage, the implication of many textures in a wound, the extensive detachment of cellular connections, wounds of joints and tendinous structures, and the comminution of bone, are the most unfavourable circumstances attending injuries, in reference to the constitution." (p. 487.) But the following remarks, which we abridge considerably, are also well worthy of attention. "Injuries of the integuments of the head, chest, and abdomen, excite, *cæteris paribus*, severer symptoms of irritation than those of other parts of the common covering." —"The mucous and serous membranes arouse, when the subject of injury or inflammation, the highest degree of constitutional sympathy, from their intimate relation to the vital functions; but the constitutional irritation is more intractable in cases of injury fol-

lowed by acute inflammation of the tendinous sheaths and ligamentous capsules, or of the fibrous membrane investing the bones; at least they differ thus essentially in character;—the constitutional excitement characterising the former assumes the more intelligible and bold form of inflammatory fever; while that of the latter presents the complicated phenomena of nervous derangement, mingling with, and mysteriously modifying, if not annihilating, the sympathetic fever." (p. 52.)—" I believe, that the irritation arising from injuries of tendinous and ligamentous structures, which is universally known, is partly owing to the compactness and low vital power of the texture, and in part to its arrangement in sacs and sheaths—circumstances which dispose to continuous inflammation, and to the confinement of morbid secretions." (p. 54.)

" I believe the danger attending punctured wounds (as compared with incisions) depends on the following circumstances. *First,* Penetration of some fibrous membrane. *Secondly,* The propensity of fibrous and ligamentous membranes to continuous inflammation. *Thirdly,* The form of wound being unfavourable to the discharge of fluids secreted under inflammation. *Fourthly,* The occasional puncture of a nervous filament." (p. 58.)

2. As to the influence of the previous state of the constitution, Mr Travers very properly observes, in the first place, that there are striking idiosyncrasies in regard to the tendency to constitutional affection from local injury, referable to no general principle. " Whoever has had opportunities of watching several subjects of compound fracture under treatment at the same time, knows that the greatest degree of mischief is often accompanied by the least constitutional disturbance, and for that reason is the soonest and most perfectly restored. How different, in different individuals, is the inconvenience attending a boil, an enlarged gland, a whitlow, or ophthalmia. In some the constitution seems ignorant of the affair, and the individual pursues his avocations. In others the whole system sympathizes; the spirits are ruffled, the nights are restless, the appetite fails, the pulse acquires an undue bound; and the white tongue, the creeping chilliness, the lassitude, and slight erratic pains of symptomatic fever are present."

The most general principle that can be laid down, seems to be, that a state of health, but of habitually moderate excitement, is that in which severe injuries are best borne; and that the state of " rude health," on the one hand, " in which the nutrient powers are taxed to the uttermost, and successfully struggle with a surplus of diet and stimulus," and the state of habitual debility, on the other, of " artizans in crowded cities, who are not only condemned to breathe a vitiated atmosphere, but are, for the most part, denied the advantages of proper air and exercise," are unfavourable. " It is notorious, that in the provincial hospitals, where the majority of the patients are agricultural labourers, the results of compound fractures and capital operations are more uniformly favourable than with us. Of all classes of the community, the draymen, and coal-heavers, and gin-drinking labourers of London, are the most unfavourable subjects for severe injuries and acute diseases."—" The debauchee of high life levels, in respect of constitutional strength, with the low drunkard of all denominations, and both require a treatment, under severe injury, the very reverse of that which is adapted to the man who, from his occupation and habits, labours under what may be termed a nutrient plethora. For while the latter will be infinitely benefited by full blood-letting, and other means of reduction, wine and opium can alone save the former." (p. 28.) This last remark, we think, is stated in too unqualified terms.

Mr Travers enters his protest, however, in a long note, (p. 29.) against the " oracular decrees of some eminent persons in the profession," regarding the minutiæ of dietetics, observing, that although he does not take exception to " the argument in favour of a rational abstemiousness," yet, " every man's personal experience not only instructs him earlier and better than any one can inform him, what articles of diet to select, and what to avoid, but is the only process by which he can obtain the information correctly ;—that mankind are sufficiently aware of the truth, that innutritious and superabundant food are productive of as serious evils as insufficient food ; and that, if we speak the truth, we shall say, that those who act in disregard of this principle, do so from a less venial pretext than ignorance."

These remarks, applied, as they are, to the supposed case of medical advice, given to " those that are whole, and need no physician," but who are looking forward to the future contingency of injury or disease,—are rational and candid ; but we must be allowed to protest, in our turn, against their being applied to the case of persons, in whom symptoms of disease,—for example, symptoms of *plethora capitis*,—although not present at the moment,—have already shown themselves, and the object is to guard against their recurrence. This, however, is a digression.

" The unfavourable influence of an irritable frame of mind in the severer injuries and operations is so universally admitted, as scarcely to require illustration. The fear of pain will often suspend the sense of it, as every one knows who has had occasion to lift the dentist's knocker. But it is the fear of death which operates with real and serious force against the best efforts of human skill." (p. 19.) " Some patients are mindful of the smallest attention, and grateful for it ; obedient, hopeful ; always looking forward to recovery, long and cheerless as is the journey ; ever lightening the burthen to themselves, and those about them, by a blessed spirit of contentment. Others lie ruminating on the mischance, sullenly calculating the cost if all proceed well, cast down by every adverse circumstance, and always anticipating worse. Such differences have a marked influence on the functions of life and the powers of recovery." (p. 30.)

"The states of pregnancy and lactation act unfavourably on the female system under the additional pressure of injury or operation." "I operated in a case of exomphalos on a lady in the fifth month of pregnancy; the operation was performed early and promised well, and the function of the alimentary canal was restored. The diffused peritoneal inflammation was however destructive; it sat in later, and was more feebly marked than usual, and her situation was, I think reasonably, considered to turn the scale."—"I trembled for the fate of a fine middle-aged woman, from whose breast I saw a scirrhous tumour removed in a state of full lactation (seven weeks:) the milk sprung as freely as the blood under the knife. She was seized with inflammation of the pleura, and died in six days." (p. 32.)

A pre-existing disease of the lungs, liver, kidney, testicle, or uterus, "though chronic, and in itself not alarming the constitution, becomes a drag on its elasticity, and stands in the way of recovery" from injury or operation. "A man whose hand was amputated for a diseased wrist-joint, supported the operation with firmness, and was proceeding in all respects well, when, on the third day from the operation, he suddenly expired. On examination, the lungs were found to contain numerous small tubercles in an incipient stage; and a recent copious effusion of serous fluid had taken place betwixt the tunics of the brain." (p. 34.)

The gradual reduction of the system during the progress of a local disease "is, to a certain extent, favourable to the result of a capital operation, but it may be lowered too much. Thus we frequently see a hectic, originally produced by the irritation of a scrofulous joint, rendered permanent by insidiously supervening diseases of the viscera, especially of the lungs. The constitution in such cases is predisposed by one disease to the production of another." When scrofulous action, in particular, has been excited, and the system lowered by its continuance, it must be expected, that even slight exciting causes will produce it anew, in any part of the system on which they may act, as might be illustrated by the history of many cases of scrofulous internal disease.

In regard to the influence of the scrofulous habit on the constitutional effects of injuries, Mr Travers observes, "In this temperament, idiopathic inflammation is so obscure in its origin, and attended by so little suffering, as often to elude observation until announced by disfiguration and lameness. Even in the severe injuries of persons of this temperament, a similar degree of apathy prevails; the symptoms of direct constitutional irritation are masked, or are so comparatively lenient as hardly to disturb the health; and the onus of the mischief falls, as by accumulation, on the more advanced stages of its progress," when hectic fever is first formed, and then "consentaneous morbid changes in the viscera" take place, by what Mr Travers calls "reflected irritation." This is certainly the course of things in many such cases, and the subject of fresh and distant local disease, excited by the constitutional affection proceeding from local injury, is of great importance; our author promises to consider it fully in another work.

Lastly, on the subject of the influence of the previous state of the system, on the constitutional effects of injuries, Mr Travers commends the practice of his friend Mr George Young, who used to "accustom his patients, before any considerable operation, to the same reduced diet, rest, and restraint which would be necessary after it." Thus, when about to extract a loose cartilage from the knee-joint, he confined his patient to the house, "and put on the roller, and bound on the back-splint, exactly as he intended to do after the operation, to keep the limb perfectly steady." This confinement of the limb excited some transient fever, but was continued; and when the bandage no longer excited any irritation, the operation was performed. "Not one untoward symptom arose, the constitution was not in the least ruffled, and the wound healed by the first intention."

II. The first class of cases of dangerous constitutional affection from local injury, described by Mr Travers, consists of those where the symptoms consequent on the injury are those of *simple depression of the vital powers*, or, as he expresses it, "*prostration without reaction*," up to the time of death;—the shock sustained being such as, either in consequence of its own intensity, or the previous state of the system, destroys the irritability of the vital organs.

This he has observed under the following circumstances.

1. When the injury sustained, although of no unusual magnitude, has been attended with *strongly depressing mental emotion*, (especially that which arises from a fixed prepossession of a fatal event,) or *with intense pain*, or *excessive voluntary exertion*. Several cases are given in illustration of these points: for example, "A young lady, happily married, impressed probably by some unexpectedly fatal occurrence in the circle of her friends, entertained, from the commencement of her pregnancy, a morbid fear of death in child-birth. She was attended by a skilful and experienced accoucheur, who was also her relation. He assured me, that the labour was in all respects easy and safe, and that not a single unfavourable circumstance attended it. The child was still-born and imperfect. The mother died suddenly, in six hours after delivery. Every region of the body was examined with care by an eminent anatomist, and presented the appearance of health." (p. 22.)—"A man who had been bitten in the finger by a cat, and in whom symptoms resembling those of hydrophobia had been present for twelve hours, being in perfect possession of his mind, summoned an extraordinary resolution to command his spasms, while the excision of the bitten part was performed, and died, evidently exhausted by the effort, in three minutes. The suddenness of the event was remarkable, although the fatal termination of the case, at no distant period, was looked for.

"The death by collapse not unfrequently takes place at the moment of transition from pain to ease.

"Sir Astley Cooper, in his Lectures, relates the case of a brewer's servant, a man of middle age, and robust frame, who had suffered much agony for several days, from a thecal abscess, occasioned by a splinter of wood penetrating beneath the nail of the thumb, and who, a few seconds after the matter was discharged by a deep incision, raised himself by a convulsive effort from his bed, and instantly expired." (pp. 24, 25.)

In other cases, the progress of the fatal event has been less rapid, but equally unmixed with any symptoms of reaction, as in the case at p. 68, where labour pains were protracted twenty-four hours after delivery, by the gradual forcing down, through the external orifice, of a large fleshy tumour, which had been attached to the posterior part of the mouth of the womb.

We think Mr Travers is right in enumerating, as another example of the same kind, the case of "sudden, excruciating, and unremitting pain, from rupture of the stomach, gall, or urinary bladders," or of any part from which a fluid, not usually applied to the peritoneum, is effused into the cavity of the abdomen; in which case, "death takes place many hours sooner than when the pain is less intense," and before any decided effects, discernible on dissection, of the inflammation thus excited, have been produced. Indeed, in the common case of peritoneal inflammation, from whatever cause, the fatal event, although less quickly produced, seems to us to depend on the same principle, and to be referable simply to the peculiarly depressing influence on the circulation, of the particular sensations that accompany inflammation, and some other diseased actions, in the abdomen. And this principle is, as we have no doubt from repeated observation, susceptible of important application in practice. The next object to the reduction of inflammation in the abdomen by blood-letting, is the relief of the peculiar and depressing pain, which may often be safely and usefully accomplished by full and repeated doses of opium.

We cannot, however, agree with Mr Travers in referring to the same principle the rapidly fatal effects of "oxalic acid, arsenic, and other poisons taken into the stomach," which, he says, "seem to destroy life by an action on the nervous system, of which the characteristic expression is overwhelming pain;"—and "the acceleration of the issue of which he conceives to be owing simply to excessive pain." (p. 72.) For we conceive it to be established, that the rapid and peculiar action of these, and many other poisons on the circulation, (whether taking place through the intervention of the nervous system or not,) is at least independent of their direct irritant effects on the parts to which they are immediately applied, and that it is often, and especially in the most rapidly fatal cases, marked, as Morgagni states, "virium potius lapsu, quam acrioribus doloribus."

2. Another set of cases, in which a fatal depression of the vital powers often results immediately from injury, is that of *severe burns.* A man mentioned by Sir A. Cooper, "fell into a vat of hot beer, by which both his lower extremities were scalded. His pulse was very small and feeble; his skin cold; his teeth chattered; no reaction took place, and he died in eight hours, notwithstanding stimulants were freely given." (Lectures, vol. i. p. 22.)—"Two female children, the eldest nine years of age, were received into St Thomas's Hospital in October 1822, extensively burnt in the abdomen, arms, and thighs. The cuticle was for the most part removed by abrasion; the pulse in both was exceedingly contracted, the surface pale, and lower extremities cold. They made little complaint of pain, except occasionally of the abdomen, and soon became torpid and disposed to sleep, though sensible when roused; convulsive twitchings of the limbs were frequent. Notwithstanding the exhibition of wine and sago, ammonia, camphor, &c. there was no sign of reaction in the system, nor in either case any pulse to be perceived for several hours before death. Neither of them survived the injury twenty-four hours." (Travers, p. 88.)

Various other cases of the same kind are given, and we presume every practitioner has seen such. We may mention by the way, that such cases present an exception to the general rule in legal medicine, by which we are directed to distinguish, in the dead body, the effects of fire applied before and after death, namely, by the marks of vital reaction, (inflammation and vesication, &c.) about the part destroyed; no such local reaction taking place where the general powers of the circulating system, from the time of the injury, are so completely prostrate, as in cases of this kind.

Mr Travers professes himself "at a loss to understand why these fearful symptoms appear in some instances, and not in others; why they are occasionally fatal in less adverse, and absent in more threatening circumstances;" but he observes that they appear to be most readily produced by burns on the neck, chest, and abdomen.

3. *Other severe injuries or operations,* though not in vital parts, sometimes cause death, in like manner referable only to the shock, and not preceded by any reaction. "I have seen a person admitted into Guy's Hospital," says Sir A. Cooper, "who had a laden waggon pass over his knee; the bones were crushed, but there was no wound or hemorrhage, yet the person died a few hours after admission."—"I was called to a fine lad, 13 years of age," says Mr Travers, "who had received the charge of a musket, consisting of slugs, in his thigh, from the accidental firing of the piece,

as he was standing six feet from the muzzle. The charge entered two inches from the trochanter major, and passed obliquely across the limb. The external wounds were small. The comminution of the bone was plainly to be perceived. There had been no external hemorrhage, but the pulse could not be felt at the wrist. His countenance was pallid, surface cold, and the pupils fully dilated. He was perfectly rational when roused, but strongly disposed to stupor, made no complaint of pain, but was troubled with insatiable thirst. Heat was applied to the pit of the stomach and extremities, and warm cordial drinks freely given. He died without any material alteration, except increase of the stupor, nine hours after the injury. On examination, the hip-joint was found uninjured, the trochanter and upper part of the body of the femur were shattered to fragments; the surrounding muscles extensively lacerated, and the artery torn across; the effusion of blood was inconsiderable, the torn ends of the vessel having contracted and receded. The contents of the head, chest, and abdomen, were perfectly natural." (p. 109.)

"I have seen a man die almost immediately," says Mr Hunter, "on the loss of a testicle. I have seen convulsions attend the operation for hydrocele, so that I have almost despaired of recovery. When, after a considerable operation, there is rather a weak, quiet pulse, with a nervous oppression, a seeming difficulty of breathing and loathing of food, the patient is in a dangerous way."

"A child, three years old," says Mr Travers, "was the subject of lithotomy at St Thomas's Hospital, in the summer of 1805. The operation was admirably performed, and did not exceed one minute by the watch. A slight shivering came over the patient on being replaced in bed, and the natural temperature of the surface was not restored. He was inclined to doze, and a little convulsed, and at two o'clock the following morning died." (p. 135.)

"In December 1807, a child, aged three years and a half, underwent the same operation under as favourable circumstances. An hour after being put to bed, he also chilled; a stupor came over him, but without convulsion; and he gradually sunk into a state of deliquium, and died before ten o'clock the same night.

"About the same time, a lad of 16 was cut at St Thomas's. Every thing went on well in the theatre; the same chilliness and torpor ensued, he sunk rapidly, and died at nine o'clock the same evening.

"In each of these cases, the unfavourable symptoms showed themselves about an hour after the operation; all of them watered, but not so abundantly as usual.

"In neither of the preceding cases was the calculus remarkably large, nor had any unusual hemorrhage or other untoward circumstance occurred during the operation." (p. 136.) *

In the following case, abridged from our author, (p. 121,) the depressing effects of the shock, almost equally unmixed and

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* In these cases, it was afterwards found, that the patients had been accustomed to the use of gin, which was therefore allowed to the next patient in similar circumstances, with the best effect.

progressive, were chiefly observed after the amputation of the injured limb. This may be partly explained by a præternatural irritability of the nervous system, the boy, six months before his death, having had his arm fractured, and narrowly escaped with his life, from meeting an over-driven ox. His terror had been such as to affect manifestly his health and spirits for a considerable time. He was brought to the hospital a second time, with his wrist and hand smashed to pieces, by being drawn into a part of a wool-carding machine. There was little or no hemorrhage, and he bore the amputation of the forearm the same evening almost without complaint. Next morning made no complaint of pain; pulse rather quick and full; took ℥*ss.* of castor oil, which operated three times. At 1 P. M., had had nausea and vomiting of all drinks for two hours; much thirst; no pain; pulse very quick and rather indistinct; a copious cold perspiration on the breast and forehead. Effervescent draughts with laudanum given, but rejected. At 10 P. M. vomiting continued; extremities cold; partial sweats profuse; pulse not felt at the wrist; much anxiety and oppressed breathing. Calomel and opium pills were instantly rejected. A little blood was taken from the epigastrium by cupping, and a sinapism applied; brandy given; and an opiate enema. The vomiting abated somewhat, but the circulation never rallied; the anxiety and labour of breathing continued; and he died forty-eight hours after the accident—his senses being entire till within half an hour of his death. On dissection all the organs were remarkably sound, and there was no morbid appearance, except a slight erythematous blush on the villous coat of the stomach, considered to be the effect of the incessant vomiting.

A somewhat similar case was furnished to our author by Mr Brodie. (p. 124.)

Another case is described, in which amputation above the elbow, performed when the patient's strength seemed tolerably entire, and without the loss of more than an ounce of blood, but which had been preceded by much hemorrhage and a state of collapse—was followed by repeated swoonings, and death in twenty-four hours. (p. 183.)

These cases, in which causes, known to be adequate to the production of fever, act with extreme force on the animal system, deserve the special consideration of all who speculate on the pathology of fever.

There is some variety in their symptoms,—in particular, vomiting is a prominent symptom in some, and convulsion in others, and stupor, observed in almost all for a short time before death, occurs much earlier in a few of them; but it is obvious that the essential circumstance in all is, the continued depression of the circulation, without reaction. They are closely analogous to the cases of suddenly depressed circulation, with more complete and instantaneous insensibility, produced by concussion of the brain or spinal cord, (so well illustrated by the experiments of Dr Wilson Philip;) they are analogous to the death produced by violent blows on the epigastrium, or by draughts of cold water after exhausting exercise, &c.; they are analogous to the effects of extreme heat and extreme cold, and to the few cases in which the contagion of febrile complaints, for example of the plague, has been known to operate as a direct and rapid poison; and also to the most aggravated of the cases of fever, and febrile diseases, lately described with the epithet "congestive;" and this analogy leads, as we believe, to a more correct and scientific view of these very dangerous affections, than has lately been fashionable. They are closely analogous, also, to the case of common syncope, except that this last proceeds from causes which manifestly affect the system more rapidly, and less permanently. It is well worth notice, however, that all the principal varieties which we have mentioned in the symptoms of this state of "prostration" from injury, are also observed in different cases of transient syncope, (for example, from blood-letting;) the vomiting in one—the convulsions in a second—the stupor in a third—while the failure of the heart's action is the essential part of all. That it is through the nervous system that the influence of the different injuries, in the cases we have considered, as well as the influence of most exciting causes of syncope, is transmitted to the heart, we presume will not be denied. Nor do we think that there can be any objection to extending to the whole of these cases, what Mr Travers says of the burns which are fatal in this way; excepting, indeed, that in the words in italics he has mixed the statement of a principle which will be generally admitted with a theoretical and very doubtful explanation of it. "The proximate cause of death appears to me to be a species of concussion, functional, not organic, by which the brain is *deprived of its influence over the organ of circulation;* the symptoms of cerebral disorder are first manifested; secondly, a diminution of the power of the heart; thirdly, the respiratory function becomes impeded, as a necessary consequence of the two first." (p. 108.)

In regard to the treatment of this extreme effect of local injury on the constitution, it is obvious that the vital indication, as it used to be called, supersedes all others, and that our author is right in recommending, in the first place, "Spirituous and vinous liquors and compounds, and ammonia, ether, camphor, &c. with aromatic distilled waters, warm and gently stimulating enemas, hot applications to the epigastrium and extremities, and frictions with spirituous and camphorated liniments. If any advantage be gained by these means, it becomes necessary to substitute some light aliment for the dram,—as gruel, yolk of egg, arrow-root or sago, or to join these with the stimulants, as in jelly. We have two points to bear in mind ; first, maintaining action ; secondly, not forcing action. The first requires the incessant observation of the surgeon. No nurse can be qualified to direct the administration of the stimulus. It is the devotion of a few hours to the life of a fellow creature. The duty may be divided."—" Purgative medicine ought not to be given till the circulation is restored and pretty steady, then a spoonful of castor oil may suffice. It is idly premature to talk about the secretions. If the system begins to rally, caution becomes necessary. When the signs of reaction are manifested, its excess is much to be apprehended, if such reaction has been obtained by over stimulation."

The remedy on which Mr Travers relies in the state of prostration from burns, is brandy in gruel ; one part of the former to two of the latter. " This is given in doses of a table spoonful or two at short intervals, till we obtain a sufficient distinctness and fulness of the pulse at the wrist, with a corresponding improvement of the complexion and temperature." The use of opium in burns he has abandoned, " being convinced by experience, that in small doses it is inefficacious, and in large ones injurious ;" we wish he had stated in what manner injurious. The stimulus must of course be " intermitted if the pulse becomes bounding and the patient flush. Nevertheless, in deep and very extensive burns of adults, I have frequently found it necessary to persevere in its use for a week or ten days at lengthened intervals ; occasionally intermitting, and always gradually withdrawing it." Afterwards, symptoms in the head and chest have sometimes appeared, which have demanded blood-letting and purging ; but, " on the whole," says our author, " the results of the stimulating treatment of burns,* which I have more strictly pursued since my attention has been directed to the subject of this essay, have proved highly satisfactory." (p. 465.)

When the vomiting, going along with the state of prostration, is urgent, Mr Travers recommends, in preference to all other expedients, the " cathartic or opiate injection, selected according to circumstances, the calomel and opium pill, and a bladder of hot water, or mustard cataplasm to the pit of the stomach. A spoonful only of fluid,—brandy and water, or strong tea or coffee,—should be taken by the mouth, and that seldom." We gladly bear testimony to the propriety of these directions, which may save much unnecessary suffering. Aggravated hiccup, in these circumstances, he has not known arrested, scarcely alleviated, by any remedy.

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* His first local application, to deep burns, is the turpentine and olive oil liniment, or turpentine and cetaceous ointment.

A case of direct concussion of the brain, with instantaneous loss of sense, sometimes presents clear indications for a similar treatment in the first instance. " I have seen," says Mr Travers, " a practitioner tie up the arm of a person to bleed him after a fall, in a pale cold stun, in which the pulse could scarcely be felt at the wrist."—" If, after an injury without hemorrhage, and where the head has suffered no direct mischief, the surface retains its warmth, and the pulse and breathing be oppressed, with stupor, convulsion, and inactive pupil, blood should be taken to relieve congestion, and its effects on the symptoms duly noticed. If, on the other hand, stupor and convulsion be accompanied by a contracted and cold surface, and a thready or intermitting pulse,—I have repeatedly seen both states—the cordial is the proper remedy. Greater freedom of the circulation, and a consequent diminution of the stupor and convulsion will be found to follow both one and the other practice, as it is judiciously resorted to." (p. 461.)

The most violent convulsions we remember to have seen, were an illustration of this remark, having immediately followed a fall from a considerable height on the feet; having been attended by stupor, a cold skin, obscure respiration, and slow very feeble pulse; and having abated after frictions with *aqua ammoniæ*, and the use of stimulant enemata. The reaction in that case was very moderate.

III. The more frequent form, however, of dangerous constitutional affection from injury, is what Mr Travers calls *prostration with excitement*. In this case, instead of the simple and permanent depression of the vital powers, described in the above-mentioned cases, a febrile paroxysm soon sets in, generally with rigors; but, as Mr Hunter says, " does not perform all its actions," and the symptoms that follow indicate unusual derangement of the nervous system, with weakness of the vascular.

" Prostration with excitement," says Mr Travers, " is marked by the signs of languor and stupor or drowsiness in the commencement, to which, after a variable interval, succeed rigor, precordial anxiety, restlessness, jactitation; a rapid and bounding pulse, oppressed respiration with frequent attempts to sigh, flushed countenance, contracted pupil, dry heat of skin, parching thirst, rejection of liquids taken into the stomach, incoherence and wildness of expression, sometimes amounting to fierce delirium. This state is succeeded by exhaustion marked by somnolency, a profuse chilly and clammy sweat, a haggard and livid aspect, a small irregular or fluttering pulse, rapid panting respiration, passive convulsions, hiccup, and subsultus, the stupor and stertor of apoplexy, and death." (p. 407.)

Mr Travers gives instances of this kind of constitutional disorder from injury, with considerable variety in the symptoms, and occurring under a variety of circumstances. These we would arrange under the following heads:

1. In some instances, the symptoms above described appear to result from a combination of the general depressing action of the *shock or concussion* that has been received, with the symptomatic fever that results, partly, no doubt, from the general concussion itself, and partly from the inflammation that has been excited by the injury. The depression produced by the shock has been less complete than in the cases of pure "prostration" last considered, but has nevertheless existed, and modifies the fever that follows. The symptoms in these cases vary considerably, and may be said to pass by insensible degrees, on the one hand, into the state of pure prostration or depression above considered; and, on the other, into that of simple inflammatory fever, which so often attends local inflammation, without showing any signs of peculiar debility of the vascular, or peculiar irritability of the nervous, system.

In one rapidly fatal case, this irregular and very dangerous form of fever succeeded the operation of lithotomy, and in another, a sprain of both ankles, in persons previously subject to mania,—in whom a peculiar irritability of the nervous system may be safely assumed. (Cases at p. 82 and 83.) In the following case, communicated by Mr Soden of Bath, (abridged from p. 113,) some reason could also be assigned for the peculiar and rapidly fatal form of the fever, which accompanied the first onset of the inflammation. A girl, 18 years old, fractured her leg in jumping off a low wall. It was a simple fracture, and was reduced an hour after. Cold lotion was used, and the patient conveyed home three miles in a boat. Six or eight hours after, she made no complaint; her pulse was 72. At the end of twelve hours from the injury she was restless; face flushed; skin hot; breathing laborious. At the end of twenty hours she was comatose, with quick and feeble pulse; stertorous breathing; face a little flushed; pupils contracted; skin cold, particularly the legs. The parts about the fracture were slightly swelled and bruised, but not hot. After this the pulse became somewhat fuller, and skin warmer, without any return of consciousness; but in a few hours more she again became cold, and the pulse weak. She died thirty-one hours after the accident. The practice employed is not stated, which is an important omission.

On dissection, there was no trace of injury about the head; the brain was very firm; the cerebellum soft; the ventricles unusually dry; a little serum was observed on the basis of the skull, and the vessels throughout the brain appeared turgid. The pituitary gland was large and hard. The patient had had severe headach a fortnight before the accident.

The following is the succession of symptoms observed during the first sixty hours, of a case of severe burn, in a girl aged 11, successfully treated by brandy, (a tea-spoonful, with two of gruel every hour, and afterwards every two hours) with one dose of laudanum, two doses of castor oil, and an enema. The burn extended over much of the fore part of the body; the cuticle was destroyed; the cutis red and inflamed; pulse at first quick and full; much pain and tremor; the pain abated; she had convulsions, with cold extremities; then stupor with occasional spasm; weak frequent pulse, and rather dilated pupils; then the pulse became imperceptible for some hours; feet cold; breathing natural; she dosed continually, but was sensible when roused; the pulse gradually returned; the extremities became warmer; the tongue, from being dry and white, became moist; the face flushed, and a glow extended over the body; the pulse rose to 130, and became full; the bowels became loose, and she complained of pain of abdomen. The brandy was then discontinued.

In some instances, fever of the form we are now considering follows injury, and the inflammation succeeding injury, so rapidly as to be fatal before any of the peculiar consequences of inflammation ensue. For example, a stout porter, aged 54, was brought into Guy's Hospital, with an extensive lacerated wound on the inner side of the calf of the leg, from the wheel of a waggon having passed over it. The gastrocnemius muscle was exposed and torn, and the finger could be passed round the knee-joint, under the integuments. He refused to submit to amputation. At first, he had much pain in the wound, but his countenance and pulse were natural. In the first evening he became restless; pulse quick; pain extreme; but had afterwards a little sleep. On the morning of the second day, his countenance was sunk; pulse thready, scarcely perceptible; and the muscles of the face and arms in a state of tremor. "The wound seemed to have undergone no change." At three in the afternoon, (notwithstanding wine and opium) he was almost without a pulse at the wrist; his breathing was short and quick; face and hands in continual involuntary motion; his manner irritable and inconsistent. He had no pain, and was strongly disposed to dose but started up on attempting it in great agitation. In the evening, he fell into a raving delirium; but though his manner was resolute and determined, he was easily controlled, being quite powerless. Towards morning he became comatose, and died sixty hours after the injury. (p. 115.)

In other instances, this form of fever succeeding injury accompanies (and no doubt causes) the rapid transition of the inflammation that has been excited into gangrene. Of this kind was the case of compound fracture communicated by Mr Green, (p. 112,) fatal on the 4th day,—and the cases of injury of the knee-joint, (Laurisson, p. 148,) fatal on the 5th day,—of compound fracture, (Fretter, p. 150,) fatal on the 6th day,—and those of compound fracture, with hemorrhage, where amputation was performed, (Haggar, p. 162, and Izzard, p. 196,) fatal on the 7th and 11th days. In the first of these cases there was so much stupor, and stertorous breathing, with dilated pupil, that effusion in the brain was suspected, but " no morbid appearance whatever was found in the brain or other viscera."

These are the cases recorded by Mr Travers, in which this peculiar form of fever appeared to result most directly from the injury received; the system seeming " never to have recovered from the functional shock received at the moment of the injury." An interesting case is given at p. 129, of a boy of 14, in whom similar symptoms, (among others, delirium, subsultus, and convulsions,) occurred after severe and complicated injury of the leg, with hemorrhage, for which amputation had been performed, but were successfully treated, chiefly by laxatives, but with the aid of opiates and castor. Along with this affection of the system, there was profuse fetid suppuration and sloughing of the stump.

It ought to be noticed, that although in several of these cases this dangerous form of fever, and the fatal event, followed early amputation, on account of severe injuries, yet Mr Travers fully coincides in opinion with almost all surgeons of the present day, in stating, that in general the early removal of a badly mutilated limb, " infinitely diminishes constitutional irritation,"—because "the continued irritation of the injury augments the first danger," and keeps up symptoms which might otherwise have subsided.

2. There are a number of other cases, not sufficiently distinguished, as we think, from the above, where similar symptoms appeared, but under circumstances considerably different. There are a few, where such symptoms of disorder of the nervous system showed themselves after a long *exhausting process* of suppuration, attended with fever. Of this kind are the cases of Gurton, (p. 189,) fatal on the forty-eighth day, and of Boulivant, (p. 193,) fatal on the fifty-fifth day after the injury. In the first of these, the inflammation ensuing on a slight injury of the hand was erysipelatous, but attended, in the first instance, with simply inflammatory fever, which appears to us, we must confess, to have been very inadequately treated. But in both these cases, the symptoms of what Mr Travers calls irritation, rest-

lessness, delirium, subsultus, &c. occurred only a short time before death, and when the strength was exhausted by colliquative suppuration. The same symptoms occur often in the close of phthisis, and other diseases of exhaustion, and we cannot therefore regard them as proceeding, in these cases, from a cause analogous to that which excited them in the others treated of in this volume.

3. In a number of other cases recorded by Mr Travers, this irregular and dangerous form of fever supervened on injuries, in the first instance, *comparatively slight*, or at least not attended with any alarming symptoms. In these, it appears almost uniformly to have accompanied the accession of *an inflammation of the diffused kind*, affecting either the cellular membrane or the skin, which, we apprehend, must be regarded rather as an accidental than a necessary result of the injury; but which, when it set in, brought its own set of constitutional symptoms along with it.

Thus, in the case of Mosely (p. 146) a bruise on the back of the hand, leaving a slight wound, which was nearly healed on the fifth day, excited much inflammation over the hand, and a formation of matter in the palm, and "an excessive inflammatory œdema of the whole hand and fore-arm," speedily running into gangrene, and attended, at least from the time of his admission into the hospital, on the fifth day, with very small quick pulse; furred tongue; a glassy appearance of the eyes, and contracted pupils; much restlessness and irritation of manner, and delirium; terminating in death on the seventh day. In the case of Woodcock (p. 147) the prick of a pin on the left thumb led to rapidly diffused swelling and redness of the arm, with excruciating pain; a quick small vibrating pulse; dry brown tongue; much oppression and anxiety, going on to violent delirium for one night, and then stupor and exhaustion, and death on the ninth day; "the hand and arm then presenting a state of sphacelus." The case of Fuller (p. 152) fatal on the eleventh day, was one of severe compound fracture, a little below the knee; but the bad symptoms, rapid sinking, and fatal event, appear to have resulted from erysipelatous inflammation, extending downwards over the leg and foot, and upwards as far as the trochanters. The case of Pearson (p. 166) was a singular, but by no means unprecedented, case of inflammation, extending rapidly up the absorbents of the *left* leg and thigh, (after the excision of a tumour,) and attended with fever, nausea, and vomiting, quickly followed by erysipelas on the *right* arm and shoulder, with restlessness, anxiety, delirium, rapid sinking of the pulse, (not however till the seventh day,) cold sweats, black tongue, gangrene, and death. In the cases of Gillard

(p. 171) and Elsden, (p. 172,) on the eleventh and fourth day after amputation of the finger and toe, rigors set in, followed by fever, with great restlessness, frequent and feeble pulse, &c. which was fatal on the fifth day, in the first case, and passed into hectic, and was fatal at the end of a month in the second. In the first case, the arm swelled much, and a large quantity of pus was discharged before death, from beneath the palmar fascia; in the other, a large collection of pus was found after death beneath the flexor tendons in the sole of the foot. Mr Travers ascribes much of the constitutional affection, in these instances, to the confinement of the matter in these situations; and observes on the cases, that "when, with an indolent condition of the wound, symptoms of irritation, ushered in by rigor, arise on the third or fourth day, or later, after an injury or operation, the vicinity of the wound should be most carefully explored, all adhesive dressings be laid aside, and any sinuses that can be detected be fairly dilated."

Cases of this kind are of but too frequent occurrence in the practice of many hospitals, and are excited, not merely by serious operations, but by blood-letting, blisters, opening abscesses, or any irritation of the skin. They should be regarded as illustrating, not the effects of particular injuries or operations, but the history of the peculiar diffused inflammation, of the skin or cellular membrane chiefly, which occurs in them. The most prominent constitutional symptoms attending that kind of inflammation have been generally, in our own experience, at first decidedly inflammatory, and have appeared to require, and borne well, full evacuations; but in many instances, they are sooner or later, sometimes from the first, of the kind described by Mr Travers, as "prostration with excitement;" and when this is apparent, the chance of success is much diminished, and the antiphlogistic remedies must be used with caution, and gradually exchanged, in the progress of the disease, for anodynes and mild stimulants. The very same variety occurs in the symptoms of different cases of idiopathic erysipelas, quite independently of any difference in the extent or intensity of the local inflammation, and this is commonly expressed, by saying that the erysipelatous inflammation, or the diffused inflammation of the cellular membrane, is sometimes attended with symptoms of inflammatory fever only, at other times with a combination, or succession, of inflammatory and typhoid symptoms, and in other cases with purely typhoid symptoms, even from the first.

To what should these varieties in the constitutional symptoms attending such inflammation be ascribed? In some instances, as Mr Travers suggests, in speaking of the cases of Mosely and Woodcock above noticed, the "acutely agonizing pain which accompanies the inflammation," goes far to explain the depression of the vital powers which is observed. As we have seen above examples of pure prostration, or fatal depression of the powers of life from mere pain, we cannot hesitate to ascribe to this cause, in some cases, a power of modifying the symptoms of inflammatory fever, similar to that which we have ascribed above to concussion, or shock accompanying injury. But in other cases, the diffuse inflammation of the skin or cellular membrane is attended with more or less of the symptoms commonly called typhoid, although the pain be of no peculiar intensity. All that we can say in such cases is, that some cause, known to us only from its effects, probably acts with a depressing influence on the system, besides the local inflammation. Such cases are more akin in their history and symptoms to the exanthematous diseases, than to the simple phlegmasiæ. They often appear to proceed, either from contagion, or from some epidemic influence, affecting different persons about the same time and place; the febrile symptoms in many of them precede, as in the exanthemata, the local affection; and the symptoms they present are such as, if considered apart from the local inflammation, would decidedly indicate simple or idiopathic fever. In applying the word typhoid to such cases, we use it merely as the most comprehensive and most intelligible term that we have to express the deflection or aberration, (sometimes slight, sometimes decided,) of the febrile symptoms observed in idiopathic fever, and in the exanthemata of Cullen, from the type of simple inflammatory fever, exemplified in the pure phlegmasiæ.

The symptoms described by Mr Travers as constituting the state of "prostration with excitement," with whatever local injury they may be connected, are closely analogous to, or rather identical with the symptoms of many cases of idiopathic fever, and of exanthemata, which commonly receive the title of typhoid. This is so obvious to us, that we cannot help expressing our surprise, that Mr Travers should have stated, as a main point of distinction between what he calls irritation and fever, that, "in all fevers the nervous system is more or less involved, but, for the most part secondarily, or as a consequence, *if we except the case of phrenitis*," (p. 401.) He cannot surely be ignorant, that, by the great majority of physicians, at least since the time of Cullen, the nervous system has been thought to be *primarily* concerned in the production of *common*, *continued*, as well as remittent or intermittent *fever*, and that the affection of the nervous system, in these fevers, is very often indicated by the very same symptoms, which he describes as indicating irritation. As the "prostration without re-action" from injury, was stated to correspond to the most aggravated cases of "congestive fever," so the "prostration with excitement" may be said to correspond to those cases of fever, in which the symptoms of affection of the nervous system predominate, described by some French authors, and also by some recent English writers, under the title of "ataxique," or "atactic;"—the most dangerous form of fever that is of common occurrence, and which is observed not only in the idiopathic disease, but in some examples of all the exanthemata. In all these last, and in most cases of simple fever, more or less of local inflammation is at the same time present. But, in general, where these symptoms co-exist with the earlier stages of local inflammation, it may, as we conceive, be presumed that some other cause, besides the inflammation itself, acts on the system, and especially on the nervous system. In cases where severe physical injury has been sustained, we think it appears clearly, that this additional cause is simply the shock which the nervous system has received; and Mr Travers's book seems to us particularly valuable, as it contains sufficient evidence that true typhoid symptoms may proceed from this source.* In the cases of diffuse inflammation from slight injuries, the cause of these symptoms is more obscure, unless where we can trace a contagion or epidemic influence. But in the cases of distinctly contagious disease, (fever and exanthemata,) it is no doubt the peculiar poison which has entered,—or perhaps, in some cases, been generated in the system, which causes the peculiarity of the form of the fever. And a cause very similar to this may be fairly presumed to determine the nature of the febrile symptoms in many of the next class of cases, which we have to notice as having engaged the particular attention of our author.

4. This is the set of cases described in the longest, and, as many readers will think, the most interesting section in his book; viz. that "on Poisons," in which he treats, however, only of the effects of *Animal Poisons* taken into the system, chiefly by wounds in dissection. As we have recently and repeatedly considered this subject, and have already exceeded our usual limits, we cannot pretend to give a full account of the contents of this section; but we must not omit to state the important distinction which Mr Travers has endeavoured to establish among cases of this kind. It is well known, that, in many

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* Mr Travers nowhere speaks of the analogy of many of the symptoms of constitutional irritation which he describes, to those of typhoid continued fever—but he cannot but be aware, that those which he describes as accompanying the direct termination of inflammation in gangrene, after the severest and most extensive injuries, are precisely those by which aggravated cases of that form of fever are usually distinguished, viz. "a rapid, small, or thready pulse, which soon becomes intermittent or fluttering; a tongue, mouth, and lips, encrusted with a thick brown sordes; a relaxed and sodden skin, hiccough, tremor, and subsultus; a heavy and vacant expression of face, anxiety, low delirium, and stupor." (p. 216.)

cases of wounds on dissection with serious consequences, inflammation has been excited, in a pretty intense degree, *about the wounds*, and has spread, either in narrow lines, or more continuously, up the arm; while in others, the inflammation about the wounds has been trifling, and nothing has been observed in the arm; but there has been much pain, with more or less of diffuse inflammation, *about the axilla or shoulder*. In some of these cases a pustule, and in others a vesicle, has formed over the original injury; and, in several of these, vesications have formed subsequently over different parts of the body which have been affected with the diffuse inflammation. It is in these last cases that the worst constitutional symptoms have generally appeared; and Mr Travers supposes, that it is in these last only that absorption of a morbid poison has taken place. All the symptoms observed in the former class of cases, he thinks, may be explained by his favourite principle of "Irritation," or may be held to have been analogous to those observed from injuries, where no morbid poison can be supposed to have entered the system. The difference, in point of mortality, in the two classes of cases, is stated by him to be most striking. "Of those which present the specific character," he says, *i. e.* in whom, on the ground now stated, absorption of a poison may be presumed, "the instances of recovery have been very rare, I should think not more than one in seven; while of those of absorbent and glandular inflammation, including the cases of cellular and fascial inflammation, and of suppuration in veins and thecæ, the fatality is certainly not exceeding one in twenty." (p. 529.)

We stated, in the review of Dr Butter's book, that "when the disease (diffuse inflammation) is continuous, the danger is in proportion to the severity of the local disease; but when it springs from the local injury to the axilla or groin, without affecting the intervening portion of the limb, the danger bears no proportion to the injury, which is often so trifling as to be overlooked altogether, but to the rapidity with which the disease travels from its second station, and *to the kind and degree of impression made on the general system*;" and "we have always remarked, that the danger in cases of the latter kind is infinitely greater than in the former." Whatever the explanation be, therefore, we can have no doubt of the fact, of the much greater mortality, in cases of this description, being as Mr Travers has stated it.

Neither do we think that any doubt can be entertained of the absorption of a morbid poison in many of the cases, and of this making a powerful impression on the system, distinct from that which results from the inflammation that is excited. In proof of this last proposition, Mr Travers refers particularly to the case of Dr Bell of Plymouth, recorded by Dr Butter, fatal on the sixth day, in which there were the usual symptoms of " prostration with excitement;" or of typhoid fever, and pain on pressing the pectoral muscle, " but no redness nor visible sign of inflammation," up to the time of death. And he quotes a still more striking case, on the authority of Sir A. Cooper, of a young man who, after a puncture in dissection, had great pain in the finger, " high constitutional irritation," violent agitation of the nervous system, nearly resembling hydrophobia, and died in this state forty hours after the injury, " no trace of inflammation being apparent, beyond a slight redness at the wound." (p. 203.) In these cases, " the local signs were apparently anticipated by the death of the patient," just as the symptoms of contagious fever, or of plague, have, in a few instances, been anticipated by the rapidly fatal action of the contagious poison.

Our author has given seven cases at length, in which there was diffuse inflammation at the axilla following puncture, and the application of dead animal matter, without any affection of the hand or arm;—those of Professor Dease, (p. 232,) of Mr Newby, (p. 242,) of George Heginbotham, (p. 246,) of Mr Graves, (p. 253,) of Mr Archer, (p. 259,) of Mr Delph, (p. 263,) and Mr Smartt, (p. 267.) All these cases exhibited " strong excitement in the commencement, with early and rapid prostration," and early and great disorder of the nervous system, much restlessness and anxiety, delirium more or less violent, and stupor sooner or later. The first five were fatal at different times, from the eighth to the twenty-second day after the injury. The state of the inflamed parts at the time of death is in general not distinctly stated, which we cannot but regard as a serious omission; but there appears to have been considerable variety in their condition. The two last gentlemen recovered after several weeks of dangerous illness, and long-continued and profuse suppuration about the shoulder.

We have next an account of six cases, in which violent inflammation, ending in suppuration more or less extensive, was excited by a similar cause, in the neighbourhood of the wound, and extended up the arm. In some of these, the *glands* in the axilla inflamed and suppurated, but the distant and *diffuse* inflammation about the shoulder or breast was wanting in all but one, (that of Mr Slight.) The constitutional symptoms, however, were in several cases very urgent, and in some partook of the character of " prostration with excitement," though in general they may be said to have been more simply inflammatory. These are the cases of Mr Clifton, (p. 294,) of Mr Brayne, (p. 302,) of Mr Slight, (p. 310,) of Mr Wansburgh, (p. 314,) of Mr Percivall, (p. 318,) and of Mr Delph on his second accident of this kind, (p. 386.) All these cases were successfully treated, although in several the suppuration was long-continued and profuse, and Mr Slight had exfoliation of one of the ribs, and Mr Percivall lost a finger by mortification. It is well worthy of notice, that Mr Slight's, which was the worst of these cases, was the only one in which local blood-letting at least was not used pretty freely; and that Mr Delph, who, after having had a great many leeches applied, was bled to syncope (by Mr Travers's direction) forty-eight hours after the accident, escaped more easily than any of the others.

The worst symptoms, in these cases, Mr Travers believes to have resulted from suppuration, and the confinement of matter beneath the thecæ of tendons, and fasciæ of muscles. "If the wounded finger or thumb is disfigured by excessive œdema, the symptoms of disturbance are less severe than when, with great tension, the swelling is inconsiderable, and void of fluctuation, so as to make the existence of matter doubtful. The quantity of pus is so small, and the relief of discharging it so great, as to demonstrate that its situation alone had given rise to the intense pain and extreme constitutional disorder." (p. 217.)

In illustration of the effects of such confinement of matter, an interesting case is given, (that of Mrs C., p. 374,) where there was a slight recent wound of the finger, but no introduction of a poison (though suspected by the patient herself) could be ascertained. But urgent constitutional symptoms, high fever and violent delirium at first, and afterwards great prostration of strength, diminished sensibility, and loss of power of articulation and swallowing, subsultus, &c. seemed to coincide with the formation of matter in small quantity, first within the theca of the flexor tendon of the fingers, which was evacuated with relief, and afterwards within the fascial sheath of one of the muscles of the arm, which was not ascertained till after death. Cases of inflammation of a vein from this cause do not seem to have occurred to our author's observation.

Three cases are given by Mr Travers, which were of a mixed character, there being both active inflammation in the parts wounded, and to a certain extent up the arm, and also the diffuse inflammation extending from the axilla. These are the cases of Dr Pett, (p. 223,) of Mr C., (p. 249,) and of a young gentleman, (p. 518.) These were all fatal on the fifth, sixth, and eleventh days after the injury. The symptoms in the two first were those of "strong excitement, and much affection of the brain, followed by early and rapid prostration;" in the last there was less excitement, but muttering delirium, and gradual sinking, with incessant hiccup and vomiting. Leeches were employed in these cases, but the number is not stated; the other remedies used were laxatives, diaphoretics, and stimulants, with opiates in the last case.

We think the distinction among cases of this kind, pointed out by Mr Travers, one which should always be kept in view in the treatment of them; but we are not prepared to acquiesce in his opinion, that in those cases where the inflammation spreads gradually up the hand and arm, the poison acts only as a local irritant, and is not absorbed into the mass of blood. In order to establish this, we conceive that it would be necessary to show something uniformly and specifically different in the symptoms of the two cases, indicating that a poison acts on the system in the one case, and not in the other. Now Mr Travers has repeatedly and unequivocally stated, that although *generally* the highest constitutional irritation, *i. e.* the worst typhoid symptoms, attend the cases in which, on the ground that has been stated, he presumes absorption to have taken place, yet this is not uniformly the case; that "there is nothing in the character of the constitutional disorders which distinguishes the case of specific (*i. e.* from absorbed poison) from that of simple irritation;" and that "the irregularity and vehemence of the constitutional disorders are occasionally as great in the cases of non-absorption." (p. 373-4.) This, we think, is in fact acknowledging, that we have no means of judging with certainty in what cases the poison is not absorbed. We may add, that we have seen quite enough of cases answering exactly to Mr Travers's description of specific irritation from absorbed poison, to know, that, in *some* cases, it is attended with such a state of the constitution as admits of, and appears to require, and terminates favourably under, large and repeated evacuations of blood.

All that we can say, therefore, is, that the cases in which the arm is unaffected, or little affected, and in which the diffuse inflammation spreads from the axilla, are those in which by far the greatest danger is to be apprehended; and that it is in them chiefly, though neither uniformly nor exclusively, that the bad typhoid symptoms, or those of "prostration with excitement," are to be apprehended.

In regard to the origin of the poison, which is clearly received into the system, in some at least of these cases, Mr Travers observes, that the "larger proportion have their origin from examination of bodies recently dead under inflammation;" but that of the cases recorded by himself, "nearly as many had their origin from the dissection of stale bodies, *i. e.* such as had been buried, as of recent subjects." (p. 345 and 346.) It would seem, that the poison is not the result of diseased actions in the living body, because "the disease in question has been known to arise from the examination of the bodies of persons who have died suddenly, and in health, in consequence of surgical operations, as the Cæsarean section, and is most commonly produced from the dissection of subjects who have died of non-contagious diseases." Our author is, therefore, "disposed to conclude, that the poison is generated after death, and pertains to the process of decomposition in its early stage. (p. 366.) The "Pustule maligne," or variety of carbuncle, which has been observed in various cases (quoted by our author at p. 367, *et seq.*) to be produced by eating of the flesh, or by contact with the fluids of animals affected with epidemic disease, does not seem to bear any analogy to the effects of the poison imbibed from dissection. Some curious facts are stated, resting in part on the authority of Professor Coleman, in regard to the communication of the matter of glanders from the horse to the human subject. It appears that this poison may be received both from the living and dead animal; and, when received, leads to the formation of chronic abscesses in different parts of the body, different in seat and form from the disease in animals; but the matter of which is nevertheless capable of producing the genuine disease in animals. (p. 350, *et seq.*)

5. As a cause of "Constitutional Irritation," especially of "prostration with reaction," Mr Travers treats very shortly of loss of blood, observing that "hemorrhage in itself is adequate to the production of prostration, either pure or mixed; and that he is afraid it is not uncommon for such a state to be produced by the imtemperate use of the lancet;" but on this subject he refers chiefly to Dr Marshall Hall's late publication, which was fully considered in our last volume. On this point, we would only beg to remind our readers of what was then stated, that although the state of excitement succeeding to large blood-letting is of real and frequent occurrence, (particularly in irritable habits, and therefore more commonly in women and children, than in men,) yet it seems to have been too hastily assumed that it is the mere effect of loss of blood. From our own observation we should say decidedly that it is rather "a modified form of the disease for which the blood-letting was thought necessary," or, as we may express it more specifically, that it is the constitutional fever, which the inflammatory disease has excited, continuing after the local inflammation has been either subdued, or very much altered; and receiving a modification from the impression which has been made by loss of blood, on the system at large, and especially on the nervous system. The effect of different impressions on the nervous system, in modifying the symptoms of inflammatory fever, so well

exemplified in many cases in the work before us, is enough to show that a cause, known to act so powerfully on that system as large blood-letting, may be expected to have a well-marked influence in this way.

We cannot concur so unreservedly in our author's views of the proper treatment of the state of Prostration with Excitement, from whatever of the causes now enumerated it may have proceeded, as we did in what he says of the treatment of Simple Prostration. Indeed there are some distinctions on which he seems to rely in his practical views of the subject, which we are by no means sure that we understand, and, so far as we can understand his general principles, they seem to us in some instances inconsistent with one another. He says, (p. 489,) "the treatment of deficient reaction, and of that which is excessive, resulting from injury or operation, prior to the commencement of inflammation, should adapt itself to the symptoms present in the two states, with this general qualification, that both are evidences of deficient powers." And when speaking of the effects of the animal poison, (p. 537,) he says "it appears to me that no rules for constitutional treatment, to hold in all cases, can possibly be laid down; that we should err equally in uniformly prescribing a stimulant or a depressing treatment for these cases. The cause of irritation, the symptoms, and the habit and state of health must be referred to, and from the aggregate the inference must be formed." In another place he says, "The terms poison and specific have been somehow supposed to convey a mysterious import of incurableness. Nothing can be more contrary to reason than this impression. If a common pathological character, viz. that of over-excitement of the nervous system be established, the constitutional treatment of the cases will be similar. The difference in rapidity of developement, in vehemence of action, must be met by a corresponding activity of treatment. We must not suffer ourselves to be betrayed into a hypothetical belief, that the operation of the poison contraindicates the employment of those measures which have been found efficacious in proportion as they have been early resorted to, in cases to which these bear a strong and obvious analogy." (p. 391.) And again, "we are warranted by an analogy of symptoms, clearly made out, in pursuing similar modes of treatment in simple and poisoned wounds." (p. 539.) These general remarks appear to us perfectly judicious; and in conformity with these, we are not surprised to find our author stating, that, in his practice in severe burns, after the stimulant remedies formerly mentioned have been used with good effect, "in some instances when reaction was permanently established, symptoms of the head or chest have made their appearance, which required blood-letting general or topical, and in which a smart purge of calomel and scammony has been very useful." (p. 464.) Neither are we surprised to find it stated, that, in cases of acute inflammation of the *tela cellulosa*, consequent on slight wounds, and going on to "extraordinary Constitutional Irrritation," "the common error is reliance on topical blood-letting, till general blood-letting is interdicted." (p. 158.)

But in other places we find strong and general condemnation of the antiphlogistic measures, and especially of blood-letting, in the earlier stages of most of the cases treated of in this work. When speaking of slight wounds, on which erysipelas has supervened, and of the erythematic inflammation excited by inoculation with animal poisons, he says, "they are accompanied by a remarkable depression of nervous energy, showing itself either in pure prostration, or in prostration with excitement and exhaustion. All reduction of power is a violation of the leading indication, and the antiphlogistic measures adapted to simple inflammation and its sympathetic fever are therefore positively contraindicated." (p. 529.)

Again we are told, that even in "inflammatory fever ensuing on complicated injury, we ought not to use any rough and permanently depressing or debilitating means to put it down, neither blood-letting nor continued profuse purging and sweating, lest we incur the danger of converting inflammation into irritation, and thus destroying our only medium of recovery." (p. 495-6.) And in regard to the treatment of "sympathetic irritation, as compared with that of sympathetic fever," that "blood-letting, general and topical, and a forced increase of the secretions by active forms of medicine frequently repeated, are calculated to increase, in an alarming degree, the symptoms of irritation;" that when the bowels are obstinately confined, procuring copious bilious evacuations, by aloes, colocynth, blue-pill and calomel, is right; but that in general "alcohol, ammonia, ether, camphor, opium, and henbane, and bark in substance, decoction, and tincture are the articles upon which, in the circumstances respectively indicating their use, I believe most reliance may be placed in the treatment of acute sympathetic irritation." (p. 500.) And the conclusion of the whole book is a recommendation, in irritation, as distinguished from inflammation, of "an earlier and freer use of the means best suited to support and renovate the powers of the nervous system, than is consistent with the prevailing practice." (p. 543.)

If these last assertions can be satisfactorily reconciled with the former statements, it must be by help of some more subtle distinctions than we have been able to apprehend. But at all events, we cannot hesitate to state our own opinion, that the condemnation of evacuants, and the recommendation of stimulants, in the passages last quoted, if applied, as is clearly meant, to the case described as Prostration with Excitement, are too strongly expressed; and if taken as a guide by practitioners, will often lead them to refrain from blood-letting, where it may be used with good effect.

We willingly concede to Mr Travers, and indeed have already stated, that in nearly all the cases of which he has treated in this volume, another cause besides the local inflammation that exists, acts on the system, probably through the brain and nerves, with a depressing influence. We grant, that when the indications of this influence are most decided, and the case takes the form of pure prostration, stimulants are the only admissible remedies, at least for a time; we grant, that when reaction and excitement do show themselves under the different circumstances of which our author treats, they are often transient, and, as he expresses it, "based in debility;" and on this account, that many of these cases are hopeless under any treatment; we grant, that, in many others of these cases, the best result to which we can look forward is, a process of suppuration and reparation of injury, which must be attended with more or less of febrile action and exhaustion, and the prospect of which furnishes an additional reason for caution in the use of depleting remedies. Still we maintain, that all these considerations should be admitted as *limiting* only, not as *prohibiting* the use of the antiphlogistic remedies in the state which he has described as "prostration with excitement." * As that state graduates on the one hand into that of simple prostration or depression, so we are satisfied from observation, that it graduates on the other into that of simple inflammatory fever from local inflammation; and in many cases of the kind, which approach nearer to the latter standard than the former, the use or neglect of blood-letting may make the difference of the recovery or death of the patient.

We think that Mr Travers has not sufficiently adverted to this circumstance, that when the different causes of depression of the vital powers of which he treats excite reaction in the system, they appear almost uniformly to act as peculiar irritants of the brain, which is marked by more or less of the "flushed countenance, contracted pupil, vomiting, incoherence and wildness of expression, sometimes amounting to fierce delirium," introduced by himself into the description of this state; in short, by more or less of the symptoms of phrenitis. These seldom go on, we believe, in cases of this kind, to the results of active inflammation, or to large serous effusion; but we have no doubt that they often go on to vascular congestion, and to slight effusion. Some examples of that kind are contained in the work before us, and we have seen others under similar circumstances;

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* See p. 332 of this Review.

and this we consider to be a part, (certainly not the whole) of the danger of these cases. The existence of other dangers is not to preclude us from taking measures to avert this, where it appears more urgent than any other. And farther, in many of these cases, there is another danger, from the intensity and extension of local inflammation, at or near the part injured, which may be lessened by the same means, and is therefore a co-indicant with the irritated state of the brain. Mr Travers appears to us to have a very clear notion of the danger of irretrievable sinking from the depleting remedies in this state of the system, but not to have adverted sufficiently to the opposite danger, of the action of stimulants augmenting the local inflammation, and accelerating or determining the transition, always to be apprehended, of the state of restlessness and delirium into that of coma.

No reasonable practitioner, who has attended to the subject, will recommend such large and frequent evacuations of blood in these cases, as in the simple phlegmasiæ; "nullum medicamentum cognosco quin solo tempestivo usu tale fiat;" but there is a wide difference between urging such bleedings, and resorting directly to alcohol, ammonia, and ether; and there is nothing of which we are more firmly convinced than this, that early, moderate, and cautious blood-letting, premised to, and co-operating with other remedies, will often save life, where blood-letting somewhat later, more copious, and less discriminate, would be fatal.

"We are warranted," says Mr Travers, "by an analogy of symptoms clearly made out, in pursuing similar modes of treatment." Pursuing this principle, we propose for careful consideration the obvious analogy of contagious fever, of which the predominance of the very same symptoms as he has described under the title of Prostration with Excitement constitutes a common and very dangerous modification, and one to which the attention of physicians has been recently and specially directed. We have here, as in Mr Travers's cases, irritation and excitation of the brain, co-existing with the influence of a powerfully depressing cause, the contagious poison, which acts first probably on the nervous system, but afterwards more permanently on the vascular. We have, accordingly, as in his cases, more or less of the symptoms of phrenitis, "based on debility," subsiding into coma, with exhaustion of the powers of the circulation, but rarely leaving behind them any marks of decided inflammation, nor more than slight effusion in the brain. And what is the general result of the experience of physicians in regard to this form of fever?—Not, certainly, that blood-letting is a certain cure for it, nor that there does not exist a cause of danger, which no antiphlogistic measures can avert; and which the incautious or excessive use of these measures will aggravate. It may be stated, we think, in general terms, that the amount of evacuation which is proper in a case of contagious fever, with any complication of local symptoms, threatening inflammation, should not, on an average, amount to one half of what would be required in an idiopathic inflammation of the same parts. But most assuredly, the result of that experience is, that there exists, in most of these cases, one danger, depending probably on increased vascular action approaching to inflammation, in the nervous system, which early and prudent blood-letting, general or local, promptly seconded by other remedies—by the diligent local application of cold, purgatives, sedatives, &c.—will lessen; that, by these means, the early tendency to fatal coma may often be averted; and the case reduced to the type of simple fever, without unusual affection of the brain, the decline of which may be reasonably expected to take place gradually, with little farther interference from art. We may refer to the writings of Dr Bateman of London, and of Drs Perceval and Cheyne in Dublin, and to the recent and excellent work of Andral in Paris,* for confirmation of what we now state; and we should deem ourselves wholly incapable of forming a judgment of, or drawing conclusions from, the facts that are daily passing before our eyes, if we were to hesitate in expressing our belief, with Dr Baillie, that "by this mode of treatment, fevers will often terminate favourably, which would otherwise have been fatal."

Another case, which presents a close analogy to many of those described by Mr Travers, is that of Delirium Tremens, where we have, in like manner, the system under the influence of a cause of depression and debility, (viz. alcohol) and, at the same time, a peculiar and well-marked excitation of the brain and nerves. The nervous excitation is, in this case, in general, remarkably under the power of opium; and we have seen cases, attended with no pain of head or flushing, with a feeble pulse, and a cold damp skin, where the action of the opiates, as in those described by Dr Armstrong, was, even from the first, evidently assisted by stimulants; but in a greater number of cases, the reaction of the vascular system, though only temporary, has been such as to admit of evacuations of blood, which have manifestly assisted in calming the symptoms, or have even been found, on repeated trials, necessary to enable the opiates to act with good effect. And in a few cases, where the indications of debility have been less than usual, we have not only seen the most marked beneficial effects from moderate blood-letting, cold, and purging, but have seen the whole symptoms subside speedily and completely under that treatment, without the use of any other remedies.

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* Clinique Medicale, Art. Fievres.

We do not present these examples of "Prostration with Excitement" as in all respects similar to the cases treated by Mr Travers. The existence of physical injury, which must be repaired by products of inflammation, and the prospect of a long-continued inevitable process of suppuration, are, in many of his cases, reasons for caution in regard to blood-letting, which do not exist in the instances we have noticed; but, on the other hand, in many of his cases, particularly those where the original injury has been slight, whether the aggravation of the symptoms be of the nature of phlegmon or erysipelas,—whether it has proceeded from the absorption of a poison or not, there is a well-marked local inflammation, independent of the condition of the brain, which holds out the prospect of a danger, only to be arrested by the antiphlogistic remedies. We allude particularly to such cases as are recorded in the sections "on Inflammation following injuries and operations," and in that "on Poisons;" of which we have seen quite enough to satisfy us, that, in this part of the world at least, early blood-letting, though certainly often ineffectual, and sometimes dangerous or inadmissible, is frequently of more service than all other remedies put together.

The cases considered in this last section, as denoting the absorption of a specific poison, are certainly the most dangerous and untractable of any, and, on account of the depressing agency of the poison, demand the most caution in the use of blood-letting; yet in some, even of these, we are confident that it may not only be used with safety, but be carried to a great extent, in the hands of an attentive practitioner, with success. Mr Travers refers to the fatal case of Mr Dease of Dublin, recorded by Dr Colles, and of Dr Bell of Plymouth, recorded by Dr Butter, as instances in which "the practice of venesection may be said to have had a fair trial." But (without venturing on any criticism on the practice in these cases, and without the smallest wish to censure the practice in others to which we are sure that the most anxious attention was devoted) we may at least say, that our author has himself furnished a melancholy list of failures, in similar circumstances, where this remedy was not tried. And in some of these, we will add, that, from the histories of the cases as they stand, we cannot help regretting, that either early venesection, or more active leeching was not employed. We would notice particularly the cases of Mr Newby, (p. 242) of Heginbotham, (p. 246) of Mr C., (p. 249) and

Mr Archer, (p. 259.) The same remark may perhaps be extended to the two cases recorded in our last Number, (p. 86) the last of which, at least, Mr Travers would certainly consider an example of specific infection.

On the other hand, we can refer to two cases, lately recorded in this Journal, (that of Mr Wiseman, vol. xxiv. p. 56, and that of Mr Forbes in our last Number, p. 30.) which answered to Mr Travers's description of "specific cases," and were successfully treated, chiefly by frequent applications of leeches, a large bleeding being premised in the second case. There was long-continued suppuration in both, but in neither did the danger of early exhaustion from the constitutional fever that was excited, and from the depleting remedies used, appear to be so great as Mr Travers's strong cautions would lead us to apprehend. We saw a more striking case within these few months, in the person of a gentleman who had previously been the subject of inflammation of the hand and arm from a puncture on dissection. From the same cause he had again a very slight inflammation on one finger, followed by rigors, a feeling of confusion, and loss of muscular power, totally distinct from what he had before experienced, fever and urgent pain, diffused swelling, and tenderness in the axilla and shoulder, without any affection of the arm. In him, therefore, there were decidedly the marks which Mr Travers has stated as characteristic of the absorption of a poison. Now, this gentleman was treated by the application of no less than 150 leeches, within a few days, to his shoulder and side. After this, the swelling and tenderness subsided, but an erythematic inflammation extended over his side for some days more, attended with much restlessness, and slight delirium, and symptoms of typhoid fever, but without any such appearances of urgent debility, as to seem to require the use of wine. He recovered perfectly under the use of laxatives, saline medicines with ammonia, opiates, and decoction of bark, and *escaped without suppuration.*

What we contend for then is, that an ampler discretionary power must be left to the practitioner, in the treatment of the state of "prostration with excitement," consequent on the various injuries here considered, than Mr Travers seems, from some of the passages we have quoted, disposed to entrust him with. The existence of a danger, sometimes an urgent one, which may be aggravated by blood-letting, is freely admitted, but this is not the only danger to be kept in view; and the symptoms denoting it are often not such as to forbid the use of early and cautious blood-letting; from which, on the other hand, if duly seconded by other remedies, the best effects may often be obtained, both as regards the affection of the brain, threatening coma, and as regards the affection of the inflamed part, threatening copious suppuration or gangrene.

Of the narcotic and stimulating remedies recommended by our author, in the state of prostration with excitement, we have little to say. We have no doubt that he is right in attributing, in some instances, a sovereign effect to opium, though we believe this will hardly be observed, as long as the symptoms bear the semblance of phrenitis. Some advantage may also, we believe, be obtained from camphor, though we cannot recommend that much faith be reposed in it; but in regard to the peculiar virtues of hyoscyamus, which is stated by our author to be "feeble as a soporific, feebler as an anodyne," but calculated to "soothe and still" most unexceptionably in the "ruffled state of the vascular system," we must be allowed to indulge in a little scepticism.

We have no doubt, that in some cases, by the prudent use of stimuli, the system may be carried through the later stages of "prostration with excitement," in which it would otherwise have sunk; but the practice requires caution, and frequent and minute observation of its effects. In general, we believe, the doses should be small and frequently repeated. The object is, not to impress the system suddenly and decidedly, but only to prevent it from sinking, until the influence of the cause of depression shall abate, and the salutary provisions of nature come into operation.

IV. We have left ourselves no room to discuss at length the pathological opinions of Mr Travers, in regard to the manner in which the system at large comes to be affected, in the various cases of which he treats, by impressions conceived to be made on the brain and nerves. This involves the fundamental physiological question of the mode of "alliance of the nervous and vascular systems," on which he maintains, in opposition to the opinion now, we believe, the most common among physiologists, that the involuntary muscles possess no power of contractility, independent of the nerves distributed to them; and even that contractility is not "a distinct and specific principle, independent of any *mode of sensation*." (p. 419.) All the morbific causes applied to the nervous system, which influence the vascular, he supposes to act, therefore, by altering or diminishing the supply of the nervous influence, or "element essential to muscular action," which is continually flowing to muscular parts from the "fountain of nervous power" and "source of irritability," the brain.

On this, we would briefly observe,

1. That he seems to assume, rather unceremoniously, that the action of the animal poison, the effects of which occupy so

large a portion of this work, is exclusively on the nervous system, and through it on the vascular.

2. That in applying the terms sensation, and "instinctive and proper sensibility," (p. 425–7,) to changes, and to the actions of parts, of which we are not mentally conscious, he alters (as many other physiologists have done) the meaning of words, which are strictly applicable to mental changes only; and deceives himself into the belief that he has explained a fact, where he has only borrowed a name for it. We can admit of no evidence of the existence of sensation or sensibility, except the evidence of consciousness.

3. That it is a logical error to suppose it to be incumbent on those who maintain, in the present state of our knowledge, the doctrine of irritability as an inherent vital property of muscular fibres, to prove the *negative* proposition, that this cannot depend on an influence derived from nerves. The rule of sound logic is "*affirmantibus* incumbit probatio:" as long as we have a set of facts, which we cannot prove to be in all cases dependent on any other set of facts, we are not only entitled but bound to class them together separately from all others. When we say that the property of irritability is inherent in muscular fibres during life, we express only the fact, and leave it open for future inquirers, to prove that these fibres derive it from the brain, if they can.

4. That it is quite a misrepresentation to suppose, that either Haller, or any of the physiologists who, since his time, have considered irritability simply as a property resident in muscular fibres, have overlooked the direct and powerful effect of changes produced in the brain or spinal marrow, on the actions of the heart,—no doubt through its nerves. The question is, not whether that effect exists, but how it is to be regarded; whether we are to say simply, that it is a disturbing influence, transmitted from the brain, under certain circumstances, to the heart, or that it is the interruption of a salutary influence, which flows to the heart from the brain and spinal marrow, even during the apparently inert state of these last organs. The first mode of expression merely states the fact, the second proposes an explanation, which requires proof. The only facts that we know, by which to judge directly of its validity, are those that have been ascertained touching the comparative effects of crushing any considerable portion of the brain or spinal marrow, and of simply cutting the cords of connection between these and the heart. If it were by simply interrupting a salutary influence, that the first kind of injury acted on the heart, the second kind should have the same effect; but we need not say, that the experiments of all the best physiologists prove the reverse. These

facts, therefore, so far from supporting the explanation in question, appear to us to have nearly the weight of the *experimentum crucis* against it.

We state this strongly, because we are impressed with the conviction, that, at the present moment, physiology hardly suffers more from the want of facts, than it does from ignorance or misapprehension of the weight that is due to the facts that are known, and of the inferences that legitimately follow from them.

There is another theoretical point of minor importance, which we think that Mr Travers has not duly considered. He always speaks of the action of vomiting, in any of his cases, as uniformly implying peculiar irritation of the stomach, and admitting of relief only from remedies applied to the stomach. Now we think there is every reason to believe that vomiting is very often dependent (for example, in the case of sea-sickness, and in that of incipient hydrocephalus,) on irritation, not of the stomach, but of those parts of the nervous system, through the intervention of which the actions of the different muscles concerned in vomiting are excited and combined; and the same principle we conceive to be applicable in many of the cases here in question.

In the appendix to this work, there is a short speculation by Sir James Mackintosh, on the " reason why certain muscular actions, though affected by the passions, are independent of volition," which, with all deference and unfeigned respect for the illustrious author, we pronounce to be heterodox, and inconsistent with the facts, both mental and physical. This we will hold against the knight, " by incontestable facts, by reasoning thereupon, and by the refutation of all objections ;" but we must defer doing so till another opportunity presents itself.

One word on Mr Travers's style of writing. It bears the marks of literary acquirements, and of powers of description, much beyond the average of his profession; but we cannot help saying, that it often betrays a want of the true taste for simplicity and precision in scientific discussions; and we cannot but anticipate with dismay a great addition to our critical labours, if his example shall render an equally ambitious and figurative mode of expression fashionable among medical authors.

We must observe, in conclusion, that the work before us entitles our author to higher than literary honours, inasmuch as it bears evident marks of zeal for the advancement of useful knowledge, and of anxious attention to his important practical duties.

ART. II—*Répertoire général d'Anatomie et de Physiologie Pathologiques, et de Clinique Chirurgicale, &c. Repertory of Pathological Anatomy and Physiology, and of Clinical Surgery; or, Collection of Essays and Observations in Anatomy and Physiology, considered in relation to the Tissues in a state of Health and in a state of Disease.* Vol. i. No. 1. Paris, 1826. First number of a Quarterly Periodical, edited by Gilbert Breschet, Professor of the Faculty of Paris.

IT would appear as if almost every medical man in Paris, who has a name at all, must also have a Journal to edit. But, whatever may be the cause which has given birth to that of Professor Breschet, there is every reason to anticipate a most cordial reception of it by the medical public. For the present number is unquestionably one of the most interesting collections of purely medical memoirs, that have appeared of late from the periodical press of Europe; and on account of the station which its editor holds as Professor of the Faculty of Paris, and Surgeon of the Hotel-Dieu, as well as the wide extent of his professional connections, and the eminence of the individuals who are to support him, we do not doubt that the future numbers will also justify the high expectations we entertain. As the best mode of enabling our readers to judge whether the character we have given is merited, we shall proceed to give a brief abstract of some of the chief papers now before us. These are nine in number, 1. A report of the Academy of Sciences on the Barcelona Fever, founded on a general view of all the works that have been written on both sides, regarding the question of its contagiousness. 2. On a new species of extra-uterine pregnancy, by *M. Breschet.* 3. On Kirronose or icteric coloration of the *internal* organs in new born children, by *Professor Lobstein* of Strasbourg. 4. On the anatomical characters of Chronic gastritis, by *M. Andral.* 5. On certain pathological states of the subcutaneous, submucous and subserous cellular tissue, by *M. Dalmas.* 6. On a congenital malformation of the membranes of the heart, by *M. Breschet.* 7. Anatomical and physiological remarks on the connections of the placenta with the uterus, on the vascular communications between them, and the mode of circulation of the fluids, by *M. Lauth* of Strasbourg. 8. A methodical retrospect of the transactions of the Surgical Clinique of the Hotel-Dieu, by *M. Hipp. Royer-Collard.* 9. Bibliographie—Programme of the prize-question of the Royal Academy of Medicine to be decided in 1828.*

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* See Medical Intelligence of our present number.

The first paper we shall select is a copy of a report delivered in November last to the Academy of Sciences by Portal, Duméril, Chaussier, and Dupuytren, on a memoir of Dr Costa, and a *notice* by him and Dr Lasserre regarding the *mode of Propagation of Yellow Fever, and the system adopted by the French Government to check its progress at Barcelona in* 1821. It is of course impossible to analyze this paper, which is worthy both of the individuals who drew it up, and of the body who ordered its publication. But as it winds up the investigations which have been made on the epidemic of Barcelona, and bears intrinsic marks of the most careful and dispassionate inquiry into the whole facts and arguments regarding the much-contested question of its contagiousness, we shall relate the chief general results at which the reporters have arrived, together with a few important facts, whose authenticity was disputed by Costa and the other anti-contagionists, but has been established by the reporters of the academy.

Dupuytren and his fellow reporters have inferred from the whole of the inquiry, that the sole result of the researches and discussions, which have hitherto taken place on the mode of propagation of the yellow fever, has been to illustrate some points in its history, and to point out the fallacy of the facts on which the contending opinions of the two sects of physicians are founded; that they are far from deciding whether the disease is contagious or not; that this question, of such vital importance to commerce, civil policy, and humanity, cannot be determined by reference to such observations and experiments, as those to which the attention of the different authors and practitioners, who have studied the subject, has hitherto been confined; that therefore it is necessary for any one, who may hereafter undertake to investigate and decide the question, to search for new criterions, or at least to be more careful in fixing the conditions and collateral circumstances, under which the old criterions are again resorted to. With these opinions we believe every impartial inquirer will readily concur. Every one will have his peculiar conviction of the relative force of the arguments advanced on both sides, and frame accordingly a *presumptive* opinion on one side or the other; but we hardly think that any one, whose opinion is not already biassed, can now take up the Barcelona controversy, examine it from beginning to end, and say that he can form a *positive* opinion on either side.

It is therefore an object well worthy of the deepest consideration of all those who have interested themselves publicly in the controversy, and we will add, an incumbent duty on the various European maritime governments on the one hand, and of their medical corporations on the other, to endeavour to ascertain at the present moment what new observations and experiments should be made, by which, in the event of the disease re-appearing, the question of its mode of propagation may be set at rest for ever. The previous determination of an *experimentum crucis*, in the fixing of which the conjunct opinions of several of the most eminent men in medicine may be consulted, is, we are sure, perfectly practicable; and will decide the question far sooner, and much more satisfactorily, than the accidental observations and isolated researches of persons, who, to say the least, can hardly ever be men of acknowledged authority, and not unfrequently are quite unfit for the task they undertake.

The Parisian reporters have gone pretty fully into the general method of investigation, which should be recommended to future inquirers; and have very properly insisted on the facts, which may be adduced in evidence, being more faithfully accompanied with a complete account of all collateral circumstances; as, without a knowledge of these circumstances, it is quite impossible to deduce safe conclusions. But they have not descended to particulars, by stating what facts they think might be received as satisfactory evidence;—a point, indeed, which would have led them into details inconsistent with the general character of the Academy Reports.

Meanwhile, they insist on the continuance of rigorous quarantine, and sanitary blockade, whenever yellow fever shall reappear,—suggesting, at the same time, several valuable and obvious improvements on the system pursued at Barcelona. The two chief alterations are, first, the abolition of quarantine on board-ship, so far as regards the crew, together with the substitution of lazarettos on land; and, secondly, the extension of the blockading circle, or, we may suggest, (as being often more practicable, and calculated to remove the population farther from the focus of disease,) the establishment of a *diverticulum*, or secondary blockade. These improvements are proper in either view of the question of contagion.

The particular facts, whose authenticity the commission of the Institute investigated, are the following. 1. Costa and the other anticontagionists deny that yellow fever prevailed at the port of Havanah, and other places whence the vessels proceeded, which were supposed to have imported the disease into Barcelona. 2. They affirm, that two of these vessels, before reaching Barcelona, landed, one of them twenty-four of her crew at Cadiz, and the other two men at Carthagena, and nevertheless without introducing yellow fever into either of these cities. 3. They deny that the Barcelona fever could have proceeded from the West India vessels, for it did not break out till thirty-three days after their arrival in the port; it appeared to proceed not from them, but in reality from a Neapolitan vessel, which had not visited the West Indies, and had been in port for three months; and, besides, a fever of the same type prevailed here and there throughout Barcelona and Barcelonetta long before the epidemic attracted notice. 4. They deny that the disease propagated itself to the adjacent cities and villages of Catalonia, although upwards of 60,000 inhabitants fled from the supposed pestilence, and scattered themselves over the country. 5. They deny, in the last place, that any of the inhabitants escaped by secluding themselves and their families.

Before stating the result of the inquiries of the Parisian reporters on these statements, we must remark, that, even if they were *all* true, they would not prove that the disease was not contagious. We have not space at present to unfold our reasons for this opinion. But it must be obvious that the three first objections would affect the question but very remotely; that the last furnishes but presumptive evidence, even if the collateral circumstances were detailed far more precisely than they have been; and it would not be difficult to prove that even the fourth, although a strong argument, is not the *experimentum crucis* we desire, so long as the circumstances are left out under which the people from the diseased district reached the healthy districts, as well as those under which the people in the healthy districts received and communicated with them.

But let us hear the reporters. 1. The yellow fever did prevail at the Havanah when the suspected vessels left it. Some of the Barcelona physicians received information from incontestable authority, that several masters of vessels, while at the Havanah, lost so many men by a disease possessing the characters of yellow fever, that they had to embark almost an entirely new crew, and that they lost others during their passage. 2. The yellow fever did appear at Cadiz after the Havanah fleet anchored in the bay; and the unanimous opinion of the physicians and municipality was, that it appeared first at that part of the bay where the vessels lay, and spread thence over the other places it attacked. No information could be procured as to the truth of the statement, that two men were landed at Carthagena from a certain vessel; but intelligence was received from the French consul there, that another vessel was prevented from being admitted to pratique by the expostulations of a midnight mob, that it was carried to the Lazaretto of Port Mahon, and that four of the workmen and health-officers, who were sent on board, were attacked with yellow fever and died. 3. The first of the vessels which was suspected arrived at Barcelona on the 29th of June. On the 19th of July a man was taken ill in a vessel which had not been in the West Indies. The chief communication, however, between the West India ships and the inhabitants did not take place till the Festival of the Constitution, on the 15th July; and towards the end of the month many of the inhabitants were taken ill. These facts were established by the inquiries of the Supreme Junta of Catalonia. 4. Many of the towns and villages of Catalonia were really visited by the disease. The reporters ascertained on unquestionable authority, that its ravages extended to eight towns in that province, and four beyond it. 5. At least some people did escape by seclusion. About 300 fishermen, who lived apart from the rest of the population, in the harbour itself, and close to the place where the whole filth of the city is collected, had only five cases of disease among them during the epidemic, and not one of these was yellow fever.

So much for the authenticity of the facts of the contagionists, which are called in question by their adversaries. The result of the inquiry into *them* may give presumptive evidence of the value attachable to the other statements of the non-contagionists. But, while we thus express our perfect conviction, that their facts are most of them false, and their arguments all of them pointless, we must, in concluding, recur again to our former assertion, that the adherents of the opinion in favour of contagion have hitherto brought forward nothing but presumption on their side; and there we leave the question.

The next article we shall select is a paper by the editor, Professor Breschet, entitled "*On a New Species of Extra-uterine Pregnancy*," together with a report on it, drawn up at the request of the Academy of Sciences, by Geoffroy-Saint-Hilaire.

The species of extra-uterine pregnancy which the author describes, consists in the developement of the fœtus in the substance of the uterus itself; and he therefore proposes to denominate it *Graviditas in uteri substantiâ*, or *Graviditas Interstitialis*. He has related seven cases, three of which had been published before, namely, one by Professor Schmidt of Vienna, in the Austrian Medico-Chirurgical Observations for 1802, another by Hedrich, a German physician, in Horn's Archiv for 1817, and a third under the mistaken title of Rupture of the uterus during Simple Pregnancy, in a pamphlet, of which, with singular forbearance, he declines mentioning either the title or the author. The other cases either occurred to himself and his friends, or were presented to him by Professor Mayer of Bonn from the anatomical museum and manuscripts of the late Dr Albers of Bremen.

The cases are all very like each other in most particulars. The anomaly consists in the passage of the impregnated ovum into the *substance* of the uterus, and its gradual developement there. The part of the organ, in which this takes place, is always near one of the angles at the entrance of the Fallopian tubes; but the tubes themselves do not concur in the formation of the anomalous cavity. The cavity does not contain any membrane, like the membrana decidua; but the fœtus is deposited in its own membranes, and these are in immediate contact with the tissue of the uterus. It is not only in the region of the fœtal pouch that the uterus is enlarged and thickened; the whole of it seems to undergo the usual changes after impregnation,—its whole parietes are very much thickened—the veins are every where greatly enlarged—the natural cavity itself is augmented in size—and it is always lined with a *membrana decidua*, of looser consistence, however, and more silky texture than in natural pregnancy. The canal of the Fallopian tubes is generally obliterated; but, in one instance, the tube of the side where the embryo was, could be traced through a part of the substance of the fœtal pouch into the uterus. In one instance, the woman appears to have reached the eighth month of pregnancy; but, in all the rest, death took place in the course of the third, in consequence of rupture of the fœtal pouch into the general cavity, and profuse internal hemorrhage. The symptoms preceding death were the usual signs of laceration of the organs of the belly, followed by those of acute peritonitis; and they commonly proved fatal within a day.

The author has proposed various explanations of the mode in which the fœtus comes into this extraordinary situation, but is disposed, in the end, to reject them all as insufficient to explain the facts, or as taking too much for granted, and, therefore, too hypothetical. The explanations he mentions are, *first*, that the cases he describes are nothing else than the developement of one fœtus within another; *secondly*, that the impregnated ovum, in passing along the Fallopian tube, had slipped between the uterus and peritonæum; *thirdly*, that the uterus had originally a transverse partition, with an aperture, which became closed after impregnation; *fourthly*, that the ovum, in descending along the Fallopian tube, found its *embouchure* into the uterus closed; that inflammation and ulceration ensued; and that, in consequence, the ovum gradually made a passage for itself into the tissue of the parietes, where it is found; *fifthly*, that, in passing along the tube, it got entangled in the dilated mouth of one of the uterine veins, which open into the canal of the tube near its termination on the inner surface of the womb; that it expanded the little sinus into which it got entangled, and was then gradually pushed into the substance of the uterine parietes by the peristaltic action of the tube; and, *sixthly*, that the uterus was divided longitudinally, as in some of the lower animals, and sometimes in the human species; and that the ovum, arriving in one of the cavities and distending it, gave the membranous partition a movement round itself till it became transverse.

He shows that none of these suppositions are altogether compatible with the facts of the cases, but, on the whole, leans to the fifth as the most plausible. One thing is certain, namely, that the fœtus is surrounded on every side by the proper parietal tissue of the womb, and that, consequently, it does not lie, as some have thought, betwixt the uterus and peritonæum.

The view which Geoffroy-Saint-Hilaire has taken is analogous to that which the author is disposed to prefer; but he has explained it more fully. He avers, that, in every instance of extra-uterine pregnancy, the ovum first reaches the uterus, that part of it, namely, into which the Fallopian tubes open; that it is impregnated there, and only there; and that, if any obstacle be presented to its passage thence into the body of the uterus, it must either grow where it is, or be pushed back into the Fallopian tube. Now, in the fœtal state of the human species, as in many adult animals, the angles at the openings of the Fallopian tubes are lengthened out somewhat; and if we suppose this construction to remain in the adult, and the communication with the body of the womb to be unusually narrow, and to be afterwards closed up, we can account sufficiently for the phenomena of interstitial pregnancy by a simple malformation, without having recourse to any of the perplexed and unsatisfactory explanations suggested by Breschet. We must remark, however, that the author of this doctrine has contrived to cloud his meaning, as is his frequent custom, by affecting a mystical and Germanic turn of thought, which makes it no easy matter for us to be satisfied whether or not we have understood him. He refers, in support of his statements, to facts in his own possession, which have not yet been published. Of course, at present, it is impossible to consider his views as any thing else than conjectural.

A Paper by M. Dalmas, *on certain Pathological Conditions of the Intermuscular, Subserous, and Submucous Cellular Tissue*, although merely a sketch, or rather a collection of hints for future inquiry, is of sufficient importance to claim some notice at present. The author thinks that the late researches of pathologists, and his own observations, lead to the inference, that the cellular tissue is much more frequently the seat of the various phlegmasiæ than is generally thought. All good authorities are now agreed as to the fact, that many diseases, which were but lately supposed to consist of a deranged state of the skin, and therefore were confounded with erysipelas, are really inflammations of the subcutaneous cellular tissue. This has been shown very satisfactorily by Dr Duncan junior, with regard to what used to be called the gangrenous erysipelas, which supervenes on wounds poisoned by the vegetable acrids and some other irritants, and likewise in certain states of the atmosphere and of the body upon dissection pricks, or common contusions. There cannot be a question, that this disease is a true spreading inflammation of the subcutaneous and intermuscular tissue.

M. Dalmas, proceeding apparently from this fact, suggests, that the same is often the case with inflammation of the mucous membranes; that the villous coat is more easily and more generally involved in the disease, than the skin in the case of subcutaneous inflammation; but that the primary disorder is often inflammation, not of the villous coat, but of the cellular tissue beneath it. The characters of the submucous inflammation are, vascularity in recent cases, œdema when the disorder is of longer standing, and suppuration when it is circumscribed and partial. It is sometimes very apt to spread widely, as in the cellular tissue under the skin; thus the author has several times seen œdema of the intestinal submucous tissue from one end of the canal to the other. When it passes to suppuration, it may cause, in consequence of the destruction of the connecting membrane, complete separation of the villous and muscular coats, just as in subcutaneous inflammation. The villous coat in the one case, and the skin in the other, are literally stripped from the adjacent coats. The same accident may perhaps take place in simple œdema, and thus *give rise to the appearance of removal of the villous coat without ulceration, or even much redness.*

The subserous tissue is still more liable to be attacked with inflammation than the submucous. The subserous tissue of the pleura may even be attacked, without the pleura itself being materially injured. Frequently, while the pleura is quite transparent, and without redness, under pseudo-membranes of great thickness, the cellular tissue beneath it is softened, injected, the ribs brittle, the thoracic parietes occupied by abscesses; or plates of osseous matter are deposited beneath it. In inflammation of the omentum, the peritonæal surface is very rarely covered with pseudo-membranes; the usual consequence is, not an affection of the serous membrane, but an effusion into the cellular tissue of blood, pus, or tubercular, medullary, or melanotic matter. Puerperal peritonitis is also often a disorder, not of the peritonæum, but of the tissue beneath; as is shown by the integrity of the former, and the redness or even suppuration of the latter. Inflammation of the joints is sometimes of the same nature. It is not the synovial membrane alone that is diseased, but likewise the cellular tissue under it, and the prolongation of that tissue along the cartilages and bones. In diseases of the arteries, it is rarely any where else than in the cellular tissue, between the inner and middle coats, that the derangement begins. In fact, the more the subject is considered, the more distinctly will it appear that the cellular tissue plays the chief part in the original developement of inflammation.

M. Dalmas has added two very remarkable cases of a general disorder of the cellular tissue, connected with almost all the great systems in the body. The disease was characterized during life by general fever, signs of inflammation of the joints, pains in the muscles of the extremities during motion, an eruption of pustular buttons, or milky patches on the skin, terminating in delirium and coma. One of the cases appeared to have arisen in consequence of the patient having slept in the open air all night, and proved fatal in about a week. The left hip and knee-joint, and the right elbow-joint, contained pus, and the subsynovial cellular tissue was strongly injected and swelled. The nerves of the limbs were surrounded by a gelatinous effusion. The muscles were brown, dry and firm, and the cellular tissue between their fibrils, particularly near the diseased points, was occupied with numerous little abscesses, about the size of millet-seeds. In the substance of the heart also there were about twenty such abscesses. The lungs and kidneys were similarly affected. The villous coat of the stomach was marbled, red, brown, and yellow, and the whole small intestines were more or less injected, particularly towards the ileo-colic valve. In the other case,—in which the symptoms at first more nearly resembled those of rheumatism, and afterwards were attended with circumscribed suppuration under the scalp, diarrhœa, inflammatory tumours in various parts, and an eruption of papulæ, Dalmas found inflammation of four joints—suppuration and œdema round the right orbit—hundreds of little abscesses among the muscles of the trunk and limbs—abscesses in the lungs, chiefly under the pleura—vivid injection of the pia mater—and likewise of the whole ileum, particularly near the colon.

The only other paper which we shall notice at present, is the first of a series, to be published in the Journal regularly, by M. Hippolite Royer-Collard, under the title of *Clinique Chirurgicale de l'Hotel-Dieu*,—being a methodical retrospect of the transactions of the surgical clinique of that hospital. As the plan has received the approbation and support of Dupuytren, Breschet, and Sanson, the present surgeons of the hospital, this retrospect will form one of the most valuable departments of the journal. The paper now published is an account of the cases lately operated on for stone. The three surgeons of the Hotel-Dieu have commenced a series of comparative operations, in order to decide which of the present most approved modes of operating has the greatest advantages. To Breschet has been entrusted the *lateral* operation, to Sanson his own *recto-vesical* method, and to Dupuytren the method lately proposed by him under the name of the *transverse operation*, and consisting of a transverse semilunar external incision a little before the anus on both sides of the raphé, and a similar transverse section of the bladder from behind forwards, by means of a double *lithotome caché*. The first operation is conceived to have the advantage of being most easily healed, the second of exposing the patient least to the risk of hemorrhage, and the third of combining both advantages. As the cases hitherto published are only six in number, a comparison cannot yet be drawn between the several methods. There are two of each variety, and all were successful—all of them were cured in less than six weeks, except one of M. Sanson's patients, who left the hospital with a *recto-vesical* fistula,—in progress, however, towards cure.

The principal object of the paper is to establish the possibility of frequently curing fistulous communications between the bladder and rectum. The alleged incurability of this sequela constitutes the main objection to Sanson's method. But Royer-Collard insists that the cure, although certainly difficult, is by no means so much so as most surgeons think, and certainly very far from being impossible. In one of the cases above-mentioned, the patient was dismissed perfectly cured thirty-five days after the operation. Six cases of the successful treatment of old fistulæ, subsequent to the operation, are also succinctly related. They were all completely cured but one, the patient thinking himself very well off with an imperfect cure, and refusing to remain any longer under treatment. The duration of the treatment, however, was sometimes very long, in one case about twelve months. The plan usually followed was cauterization, and Dupuytren prefers that with lunar caustic, introduced to the part by fastening it in a hole cut on purpose in the side of an elastic catheter.

Besides these memoirs there are others in the present Journal well worthy of notice, and in particular one by M. Andral on a subject now of very great importance, namely the determination of the characters of chronic inflammation of the alimentary canal. We shall defer noticing it till the author publishes the second part of his treatise.

ART. III.—1. *Geschichtliche Uebersicht, &c. Historical Review of the Treatises hitherto published on the Validity and Fallaciousness of the Tests for determining whether a child has been born alive or dead.* By J. BERNT, Professor of Medical Jurisprudence and Police in the University of Vienna. (Extracted from the *Beobachtungen und Abhandlungen von österreichischenArzten.* III. 1823.)

2. *Experimentorum Docimasiam, &c. A century of Experiments illustrating the Hydrostatic Test.* By J. BERNT, &c. Vienna, 1823.

THE hydrostatic test, and the long and keen controversy to which it gave rise, have lost much of their importance in this country, as well as most of the European kingdoms, since the law drew a distinction between the crimes of infanticide and concealment of pregnancy. In order to establish a charge of infanticide, it is not now enough that the prisoner be proved to have concealed her pregnancy and delivery, and to have brought forth a child, which survived its birth, or is missing; the same evidence of violent death and willful ill-treatment is required, as in other kinds of homicide.

Nevertheless, the problem, whether a child has been born alive or dead, still continues to be one of considerable interest to the lawyer and medical jurist; first, because on trials for infanticide, the proof of its having been born alive will often form presumptive evidence in support of the charge, while the proof of its having been still-born will refute the charge in the face of at least all *moral* evidence; next, because, when both crimes are charged, but the greater crime cannot be substantiated, (whether it shall hereafter be decided that the proof of the child having been still-born, is or is not an adequate defence against the charge of concealment of pregnancy,*) the proof of its having been born alive, by increasing the presumption of child-murder, will form a ground for inflicting the highest punishment attached to the lesser crime; † and lastly, because there are likewise some questions in civil law, those, namely, relative to the law of *Tenant by Courtesy*, which may be determined by the fact of the child having or not having survived its birth.

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* Mr Baron Hume remarks, that this point has not been hitherto decided, but thinks it will not form a sufficient ground of defence, as the death of the child before birth may often arise from the concealment of the pregnancy and labour.

† The highest punishment for concealment of the pregnancy, is two year's imprisonment; but it appears to be hardly ever inflicted, except when there is a presumption of child-murder.

Such, therefore, being the case, as our judges, particularly in England,—relying, it seems, on the opinion of Dr Hunter, who even in his own day was no great medical jurist, and who cannot for a moment come into competition with more modern authors,—have ventured to declare medical evidence of no use in the question; as some professional witnesses, taking advantage of this error, have avoided the trouble of an investigation by denying its utility; and as most medical men, in ignorance of the light thrown lately on the subject by foreign writers, are really at a loss what to think about it; we conceive, that a short account of the two works of Professor Bernt, the latest and best authority in this department of medical jurisprudence, will be neither unacceptable nor unimportant.

The literary and experimental researches of our author have at length, we conceive, put an end to the hydrostatic question, after nearly two centuries of uninterrupted controversy. For his method of investigation has been so minute, comprehensive, and impartial; and the conclusions he has drawn are so reasonable, and so similar to those at which every late author of eminence in Germany has arrived, that we have not any fear of their being overturned by future inquirers. In his paper published in the Observations and Essays of the Austrian Physicians, he has given a masterly view of every thing written on the subject before his time. Having, in the course of his commentaries, collected and classified all the facts and explanations to be found in authors, and tried them by the test of his own experience, he proceeded to subject the final results to trial, by requesting several of his most intelligent pupils to undertake the examination of a certain number of cases, and to keep a register of every particular from which former authors had proposed to derive a test. His *century of illustrations* is the result of these experiments. The work, notwithstanding its name, contains only seventy-five cases, collected by three of his pupils, together with a general statement of inferences drawn up by one of them. The points which enter into the register, are the maturity and general appearance of the child, and other circumstances connected with its birth; the weight and length of the body; the transverse and direct diameter and length of the head; the breadth and depth of the chest, and the level of the arch of the diaphragm; the colour and consistence of the lungs, and their state as to the appearance of vesicles, blood, or serum; whether they crepitated when cut, and gave out when squeezed air-bubbles, froth, blood, or serum; whether they floated with the heart, and alone, and in fragments, how much they differed from the specific gravity of water, the volume of water they displaced, their weight when entire, the loss of weight sustained by them when cut in pieces and squeezed; the state of the heart as to weight, the quantity of blood contained in it, and the position of the foramen ovale; the state of the arterial duct, and its relation, in point of size, to the trunk and branches of the pulmonary artery; the state of the liver and venous duct, of the stomach, urinary bladder, and umbilical cord; and generally all marks of disease throughout the body.

We shall proceed to give an account of the opinions expressed in the former work, and of the facts in the latter which bear upon these opinions. On most of the points he notices, our remarks must necessarily be short; but it may be right to give some details on the two chief difficulties in the way of the hydrostatic test, namely, uterine and vaginal respiration, and artificial inflation of the lungs.

In his historical review, he arranges the facts on which the *Docimasia pulmonum* is founded under six heads; 1. The colour of the lungs; 2. Their consistence; 3. Their specific gravity; 4. Their absolute weight; 5. Their volume; 6. The state of the stomach and urinary bladder, and the existence or non-existence of ecchymosis. To these he subsequently adds, in his century of illustrations, 7. The position of the foramen ovale of the heart; 8. The state of the venous duct and umbilical cord and vessels; and, 9. A new and important test, of his own discovering, derived from the relation of the arterial duct to the pulmonary artery and its two great branches.

I. The *colour* of the lungs is brownish, or brownish-red or bluish-red in the fœtus; but on those parts of the lungs which have been used in breathing, it is scarlet or pale-red, unless they are gorged with blood, in which case it may be brownish or bluish-red. In 1806, Professor Schmidt of Vienna wound up the disputes which had prevailed on this subject, by declaring the colour of the lungs to be the most fallacious of all the tests;* and our author adheres to this opinion, although not to its full extent. It results from his experiments, that artificial respiration in a dead child, if it changes the colour at all, causes a pale or grayish-red tint; that consequently the only tint characteristic of natural respiration (when there is not a certainty that the lungs have not been inflated) is scarlet-red; that when this tint is present, which, however, is not always the case, it affords strong presumption of the child having breathed naturally, for artificial respiration cannot produce it; and that the evidence becomes very strong, if, while the lungs are here and there scarlet, portions retaining their fœtal density and colour, *preserve their dark tint, or become only pale-red or grayish-red, when they are perforated and inflated with the blowpipe.* We can conceive but one objection to these statements, and it is not of much importance; namely, if the heart pulsates during artificial inflation, the lungs will become scarlet, for the same reason that they acquire this colour in consequence of natural breathing,—because blood is propelled along the pulmonary artery and its branches.* This conjunction of circumstances, however, can hardly occur without the child subsequently breathing naturally; and even though it did not, has it not survived birth, just as well as if it had breathed naturally?

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* Neue Versuche und Erfahrungen über die Ploucquet'sche, und hydrostatische Lungenprobe. Wien. 1806.

II. The *consistence* of the lungs, as judged of by the touch and sight, will determine whether air has been introduced into them; for in that case they are spongy and soft, vesicles are seen on their surface, and air-bubbles or froth may be squeezed out of them. The vesicles, formed by the air-cells being dilated by the introduction of air into the trachea, are very different in appearance from those caused by putrefaction or emphysema,—the latter being large and irregular; but there is not any difference between the effects of natural and artificial respiration. All authors are now agreed as to these statements. Hence, *if moral circumstances prove that the lungs were not dilated artificially, the soft consistence and regularly-vesicular appearance of the lungs, and the discharge of air-bubbles, by squeezing them under water, will prove that the child has breathed.*

III. The difference betwixt the specific gravity of the lungs, before and after respiration, constitutes the *hydrostatic test.* After a few remarks on the absurd disputes about the influence of the kind of vessel on the floating and sinking of the lungs, Professor Bernt states in his Historical Review, that this test is said to be liable to the following objections or fallacies: *First,* it is objected to the inference of still-birth from their sinking,—that a child may live after birth without breathing,—that though it do breathe, the extent of the dilatation before it dies may be insufficient to make the lungs float,—and that, though tolerably well dilated, they may sink because they are diseased. *Secondly,* it is objected to the inference of living birth from their floating,—that the child may breathe before delivery, sufficiently to make them swim in whole or in fragments,—and that the same may happen from artificial inflation—from the gases of putrefaction—from emphysema. In noticing these several fallacies, it is necessary to consider three questions under each head; namely, is the fallacy founded on fact? may it be always detected? can allowance may be made for it? If it is founded on fact, and cannot be recognised, it is very important, because *it may lead to error;* if it may be always recognised, it is of less consequence, because when present *it will only prevent the test from being applied*, and cannot lead to error; if it can be both recognised and made allowance for, it is of little or no importance, because *the test may be applied with exactness by a skilful hand.*

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* This modifying circumstance, it will be seen, has been forgotten by Professor Bernt on several other occasions.

1. The lungs may sink, though the child outlived birth,

(*a*) Because it may live some time without breathing. This point involves the previous metaphysical question,—whether a child who has not breathed can be properly said to be born alive. The Scottish law declares it cannot; at least in regard to the law of Tenant by Courtesy; for, in suits under that law, the only admissible evidence of its having lived after delivery is its having been heard to cry. The English law, however, is different; it appears from the case of Fish *v.* Palmer, tried in 1806, that the slightest voluntary movements constitute evidence of life.* In this sense, therefore, the numerous authorities quoted by Bernt, and the experience of every accoucheur in tolerably good practice, leave no room for doubt that a child may survive birth. But Bernt has exaggerated very much the duration of this kind of life, as he seems to concur with Bohn in considering as of such a nature the case of a still-born child, who, after being buried seven hours, was disinterred and resuscitated. The late experiments of Dr Edwards render it highly probable, that in the human species the duration of asphyxia is prolonged by infancy very little beyond that observed in adult age.†

According to the views of modern physiology, then, and the principles of law in most European countries except Scotland, a child may live for a short time after delivery without breathing. This is an important objection to the hydrostatic test, because it can never be detected in the cases in which it occurs. Unless there is moral proof, therefore, that the child did not stir, *the hydrostatic test can never prove positively that the child was still-born*, but only *that it has not breathed.* At the same time it will yield strong presumptive evidence, as the source of fallacy in question is of very rare occurrence.

(*b*) The lungs may sink, although the child outlived birth, because although it did breathe, the air-cells may not be sufficiently distended to make the lungs float. The possibility of this is now universally admitted. Although it was supposed by Metzger and others to occur only in immature children, ulterior observation has shown that it may also occur in those born at the full time. Bernt has supplied three cases in illustration of this fallacy. In one, a seven month's child that lived two hours, the lungs sank when entire, and only three fragments floated; in another which was born at the full time and lived a day, they also sank when entire, and only a few scarlet-coloured fragments floated; and in a third, a seven month's child, which lived two hours, the lungs were 10½ grains heavier than water, and every fragment sank.

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* Paris and Fonblanque's Medical Jurisprudence, II. 225.

† De l'influence des Agens Physiques sur la Vie, or this Journal, xxii.

So early as 1689, Thomas Craanen pointed out this source of fallacy, and showed how it might be avoided, by cutting the lungs in fragments, and trying each of them, particularly those which felt spongy. Bernt's last case, however, will prove that this precaution is not always sufficient. The fallacy will not even be always detected by the colour and vesicular appearance of the lungs, and the discharge of air-bubbles by pressure, because, as in Bernt's last case, none of these appearances may be observable. But it may be detected, and allowance made for it approximatively, by the *static* and Vienna tests to be mentioned presently. The imperfect expansion of the lungs therefore constitutes a second, though not so important a reason for the opinion, that *the hydrostatic test is not a positive criterion of the child having been still-born.*

(*c.*) The lungs may sink though the child has breathed after birth, because their dilatation is inadequate for counteracting the preternatural specific gravity caused by gorging of the lungs with blood, by œdema, by scirrhus, by vomicæ. Unequivocal instances have been quoted by Bernt to this effect. His own experience, however, proves that *œdema* can very rarely make them sink. For, in three of his cases, the lungs contained so much serum, that it formed one-half or even more of their weight; yet, being distended by artificial inflation, they swam both entire and in fragments: and, in a fourth case, a six-month's child that lived two days, the serum and blood actually formed three-fourths of the weight of the lungs, and every fragment nevertheless floated. It is generally believed, that gorging of the lungs with *blood* will make them sink, though dilated by respiration; and Hoffmann has related an instance in point, which was caused by smothering. But many authors have very properly doubted whether they ever sink from this cause when cut *into* fragments;* and one of Bernt's cases confirms their doubts.

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* *Schuster*, *Büttner*, *Metzger*, Schmidt, and Klose, from personal experience.

There is no question, however, that *tubercles*, or scirrhus, as our author calls the disease, may exist to such a degree in the fœtal lung as to cause it to sink when dilated. Several previous authors have related cases of the kind; and Bernt has added two more, in which the lungs sank, though artificial respiration had been used.

All the foregoing derangements of structure may be readily detected, and therefore *can never lead to error. They may likewise be made allowance for* by cutting the lungs in pieces. This precaution was pointed out so early as 1689 by Thomas Craanen. It appears, indeed, that when they are tubercular, every fragment may sink; but in that case the organic derangement is too great for the child to breathe. If it does breathe, some fragments must be buoyant. The present fallacy, therefore, is one of very little consequence.

2. To the inference, that the child had lived, because the lungs float, it is objected,

(*a*.) That it may breathe before delivery sufficiently to make them swim, even when entire; and still more, to make many fragments buoyant. This fact is now universally admitted in Germany; and, indeed, so many examples have been related by persons of unquestionable authority, that it is impossible to entertain for a moment a rational doubt of its validity. The most satisfactory authorities quoted by Bernt in his Historical Review, are Professors Schmidt of Vienna, and Osiander of Gottingen. The former, in the course of his practice, met with eight cases, in which the child cried when the head was born, and the rest of the body remained in the passages, and with two others, in which, after delivery by the feet, the lungs floated, though neither emphysematous nor decayed. The latter relates, besides others, a very pointed case, in which delivery was effected by the process of turning, and the child was born quite dead; yet the lungs had a bright red colour, and floated in whole and in fragments, although neither emphysematous, nor putrid, nor inflated by artificial means. Bernt himself has added four of the same description. In a child delivered by turning, and destruction of the head, the lungs were 150 grains lighter than their own volume of water, and every fragment floated. Of the other three cases, two were extracted after the mother's death,—the vagina in the one, and the neck of the womb in the other, having been ruptured; and the third was extracted by the forceps, on account of tedious labour. In these the lungs sank when entire; but many fragments floated. In the whole four, every other test coincided with the hydrostatic in justifying the inference that the child had breathed.

As this source of fallacy can neither be detected nor made allowance for by any medical investigation, it is important to inquire, before admitting it, whether it can ever be encountered in medico-legal practice? Cases of the kind may of course occur in relation to the law of Tenant by Courtesy; and, consequently, in suits under that law, the hydrostatic test is not a decided proof of the child not having survived birth; but then it cannot lead to error, because the circumstances attending delivery being always known, we can say whether respiration before birth was possible or impossible. In regard to trials for infanticide and concealment of pregnancy, the possibility of this fallacy coming in the way of an opinion will require some farther notice.

Uterine respiration can never come in our way on such trials; for it takes place only under circumstances which render manual aid necessary to complete the delivery.* *Vaginal* respiration is also so far similarly circumstanced. Respiration in the passages, as hitherto observed, takes place only, 1. in delivery by the feet, when the whole body but the head is protruded, and, 2. in natural delivery, either when the head is expelled, and the body remains in the passages; or, 3. when, before the expulsion of the head, and after rupture of the membranes, the hand is introduced to accelerate tedious labour. The first case cannot occur in medico-legal practice, so far as regards infanticide and concealment of pregnancy. The second can hardly be a cause of fallacy, as the circumstance of the child being able to breathe shows that the constriction of the chest cannot be great,—that the labour must therefore be speedily completed,—and that the child's life is secured against the ordinary accidents which occur after this period of the labour. The third case renders it perhaps possible that, in tedious labour, air may reach the child in the passages, and be inhaled by other means besides the introduction of the hand; at the same time such cases are by no means likely to occur in legal medicine, as the labour must be tedious, and consequently is not easily concealed.

It appears, therefore, that the possibility of respiration before the close of labour forms an objection to the employment of the hydrostatic test, only so far as it may occur in tedious natural labour. Now, independently of respiration being exceedingly rare in such circumstances, the objection thus constituted is important only *by preventing the inspector from relying on the test in particular and known circumstances*, not by being apt to lead him into error, because the fact of the labour having been tedious may always be ascertained by moral evidence. This objection, therefore, is not of much consequence.

(*b*.) The lungs may float, though the child has not survived birth, because they have been inflated artificially for the purpose of rousing it. Even so early as 1700, Bohn taught that the lungs might be made to float, and has recorded a case in which they actually were made to float, in this manner; and although some have been disposed to maintain the contrary, his opinion has been confirmed by every late experimenter, and is amply supported by the researches of Bernt.

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* See a Review in this Journal for October 1823, of the treatises of Hutchinson, *Lecieux*, and Capuron.

But can this source of fallacy occur in medico-legal cases? Can the mother, considering her weak and confused state, and the difficulty attending the process, inflate the lungs of a still-born child sufficiently to make them float? Most modern authors have answered this question in the affirmative; *but we do not remember to have seen any instance mentioned, in which the process was actually attempted.* At all events, it is a source of fallacy, which will not come in the way, unless the prisoner alleges in her own declaration, that she did try to rouse her child; for if she did try it, she will not readily forget to refer to such a proof of her tenderness.

Granting, however, that she can do it, it remains to be seen whether the source of fallacy may not be detected when it does operate, and even made allowance for. In 1770, Hartmann said, that artificial inflation might be distinguished by the colour of the lungs never being florid; soon afterwards Wildberg alleged that the air might be so completely expelled by pressure, as to make the lungs sink, while this was impossible, if the child had breathed naturally; in 1806, Schmidt suggested that the lungs would not be increased in weight by the passage of blood through the pulmonary circulation; and Professor Bernt now says, in his Century of Illustrations, that the nature of the case will be pointed out by the state of the arterial duct. The value of the first of these methods of correction has been considered already (p. 367;) it can never prove that the dilatation was produced artificially, because the lungs dilated by natural breathing are not always florid; and it can only furnish presumptive evidence that the dilatation was not artificial, because, in certain rare circumstances, this kind of dilatation may make the lungs scarlet. Wildberg's assertion is not founded on fact. Two authorities to the contrary are quoted by Dr Christison, in some observations on Dr Scott's case of infanticide, published in our last number,—namely, Professor Mendel of Breslau, and our author, Professor Bernt. We may add a third, of equal respectability, Dr Mertzdorff, late *Physikus* of Berlin.* The value of Schmidt's proposal will be discussed immediately under the head of the static test, and that of Bernt himself will be examined in detail at the end of this article.

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* Horn's Archiv für Medizinische Erfahrung, 1823, I. 284.

Meanwhile, the result of the whole inquiry on the subject is, that the possibility of the mother inflating the lungs of her child forms but a slight objection, because, independently of the rarity of such cases, very few can occur in which we are unable to determine whether it has been done or not;—that nevertheless, as we cannot discover this with certainty in every case, *the indications of the hydrostatic test alone cannot afford more than strong presumption of the child having survived delivery, if the mother alleges she tried to inflate the lungs.*

(*c.*) and (*d.*) On the fallacies arising from putrefaction and emphysema, we have nothing to say in addition to what was stated on these subjects in our article in October 1823, upon the works of Hutchinson, Lecieux, and Capuron. The only correction we have to make is on the statement that Chaussier was the first to notice the latter fallacy; for both Alberti in 1725, * and Schmidt † in 1806, have mentioned it. The difficulties arising from putrefaction and emphysema are of little importance, as the lungs are rarely made to float in consequence; and because, when they do float, the air may be expelled by pressure, so as to allow them to sink.

On the whole, then, it follows from the preceding statements, that when due precautions are observed, and when certain exceptions and corrections are made, the floating of the lungs will always afford at least strong presumptive evidence that the child outlived delivery.

IV. The difference betwixt the weight of the lungs before and after natural respiration, constitutes the *static* test, first proposed by Ploucquet of Tubingen. ‡

As the weight of the lungs must be increased immediately after natural breathing, by the passage of blood through the pulmonary circulation, it appeared at first a very happy idea to derive a test from this circumstance; but experience has not justified the expectations of its discoverer. It was soon made obvious that mere superiority in weight would not afford a correct criterion, as in many children who have lived even several days, the weight of the lungs proved to be less than that frequently observed among still-born children. It was therefore proposed to substitute as the criterion, the relative weight of the lungs to the whole body. But the observations of Professor Chaussier, noticed in our article formerly referred to, as well as those of Schmidt, published in 1806, satisfied medical jurists, that the amendment was hardly any improvement; because in many still-born children the ratio is a lower one than the average for those who have breathed; and *vice versa.* The experiments of Professor Bernt completely concur with those of Chaussier and Schmidt; nor have our expectations been hitherto realized, that future facts would enable the medical jurist to detect the cases to which the test is inapplicable.

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* De pulmonum subsidentium experimenti prudenti applicatione, § 83 and 84. Jurisp. Med. III.

† *Neue* Versuche, &c. 213.

‡ *Ueber* gewaltsame Todesarten, 153-156.

It has also been proposed to employ as a test, the ratio of the weight of the lungs, not to the weight, but to the length of the body; and in that way the error arising from the greater or less emaciation of the child is avoided. But Bernt's experiments are equally unfavourable to this form of the static test. The average ratio of the length of the body in inches to the weight in grains of the lungs in still-born children being one to 37.1,—that of nine who lived a few minutes, is one to 43.7, and that of nine who lived several hours or days is one to 51. But in three of twenty-two still-born children, the ratio surpasses the second, and in one of them it surpasses the third ratio; while, on the other hand, in four of the eighteen who survived delivery, the ratio falls short of that for the still-born.

Schmidt, seeing that the ratio of the weight of the lungs to that of the body was not an improvement, proposed to return to the simple method of judging by the absolute weight of the lungs, and to confine the application of the static test in this form to those cases in which the superiority of weight is such as can never be attained by the fœtal lungs. Having found therefore, that 1170 grains is a weight which the fœtal lungs never reach, he says that a weight higher than this will indicate that the child breathed. Bernt's observations agree with those of Schmidt; for in twenty-four cases of still-born children, the greatest weight of the lungs, exclusive of a case of tubercles, was 993 grains. This form of the static test is very limited in its application; for the lungs of children who outlived delivery weighed more than 1170 grains in four only out of twenty-five of Schmidt's cases, and in only three out of thirty-seven of those of Bernt. Besides, on referring to Chaussier's tables, we find that the extreme weight of the fœtal lungs has been underrated by these authors. Among 104 cases of still-born children, Chaussier found the weight of the lungs greater than 1170 in five cases; it was 1173 in one, 1282 in a second, 1297 in a third, 1343 in a fourth, and 1637 in a fifth.* Leaving the last out of view, as occurring in a child of the extraordinary weight of 8⅝ pounds, it appears that the highest, 1343 grains, is very rarely surpassed by the lungs of children who survived birth a few minutes or hours; for in thirty-seven cases of that kind, the weight was greater in three only.

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* At the same time, we must remark, that it is not quite correct to use Chaussier's tables in this way, because the lungs in these cases may have been diseased,—a point which he has rarely attended to.

The static test, therefore, may give decisive evidence in a very few cases only, and no more than presumptive evidence in the rest.

V. The next test is the increased volume of the lungs. Daniel, in 1780, proposed to determine this hydrostatically, by ascertaining the quantity of water displaced by them when sunk in it. The volume of the lungs, however, fluctuates within such wide extremes, as render it impossible to draw even presumptive evidence from their volume *absolutely*. Another way of employing it, and in some cases a very satisfactory test, is by observing how far they cover the heart and diaphragm. Our author's experiments prove, that in this form the test of the volume will sometimes give decided, and frequently presumptive evidence. According to his researches, if the fœtal lungs are not tubercular, or artificially inflated, they never cover the diaphragm and sides of the pericardium entirely, but they may cover them both in part; while, on the other hand, if the child has breathed but a few minutes, they always cover either the diaphragm or sides of the pericardium in part, and often cover both entirely. Hence, if, as is often the case, they reach neither the pericardium nor the diaphragm, the child was certainly still-born; and if they cover the latter and sides of the former wholly, it must certainly have breathed naturally or artificially.—A subsidiary test also, depending on their enlargement in volume, and a very excellent one, is taken from the state of the lower margin of the left, upper, and right middle lobes. These edges are sharp in the fœtal state, and are never rounded, but by natural breathing, or artificial inflation.

VI. From the state of the urinary bladder and stomach, our author shows that it is rarely possible to draw even a presumptive criterion of the life of the child; but the evidence will of course be decisive, if, besides the signs of respiration, there are found in the stomach portions of the fluid in which the body has been found. As to the existence or non-existence of contusions, the proof derived from that source will depend for its value on the seat and nature of the contusion. If it is not on one of those places in which it may be caused during the progress of labour, it is certain that the child outlived birth.

VII. A very singular test has been proposed to be founded on the change which gradually takes place in the situation of the *foramen ovale* of the heart,—a change which appears to have been first noticed by our countryman Ridley in 1750. According to his observations, confirmed by the researches of Mery, Dioboldt, and Haller, the position of the *foramen* on the *valvula foraminis ovalis* is gradually turned towards the right immediately after birth; and, at length, after revolving as it were round the right edge of the valve, it is found at the upper instead of the lower side of it. Our author says, in the introduction to his Century of Illustrations, that these facts have been confirmed by his own inquiries. But many cases are to be found throughout the body of the work, in which the results are so much at variance with the doctrine, that it is impossible to put any trust in it.

VIII. The changes which the venous duct and umbilical vessels and cord undergo after birth, are too slow to be of much use in medico-legal cases; because the question is almost always whether the child was still-born, or lived a few minutes or hours.

IX. It is rather extraordinary, that, before Professor Bernt, no one thought of deriving a test from the state of the arterial duct, or indeed of examining the changes which it undergoes as an object of physiological inquiry generally. It must be anticipated, that the occlusion of the duct is rapid, since its perviousness must be a material impediment to the perfecting of the child's new mode of existence. But we were not prepared to expect, as our author says he has found, that the alteration, which it undergoes almost immediately after respiration has begun, is sufficiently great to constitute in most, if not in all cases, a criterion of the child having breathed. If this discovery shall stand the test of future experience, it will be a most important addition to this department of medical jurisprudence. But we cannot help expressing our suspicion, that Bernt's own facts do not bear him out in the confidence with which he relies on it.

"In the fœtus," says he, "the arterial duct proceeds from that part of the trunk of the pulmonary artery where it divides into its two great branches, and running parallel with the arch of the aorta, and in contact with it, joins it at a very acute angle. If the child has breathed even for a few moments only, the aperture by which the duct enters the aorta becomes oval, and afterwards the diameter gradually but rapidly contracts at the aortal end, so that the vessel forms a cone, with its base towards the pulmonary artery. If the child has breathed several hours or days, it resumes its cylindrical form, but becomes all much contracted and shorter, so that, from being equal in diameter to the pulmonary trunk, it becomes intermediate betwixt that and the pulmonary branches, or even not larger than the latter. If the child has lived about a week, it is wrinkled and no thicker than a crow-quill, while the pulmonary branches are at least as large, and the pulmonary trunk is as thick as a goose-quill." These changes, if found to be correct, will furnish a very useful criterion, because, as they are determined by the relative size of objects close in each other's vicinity, the observer should not be liable to fall into error, as he is otherwise apt to do in estimating relative magnitude.

The cases in Bernt's own tables, however, show, in our opinion, that the test, though generally, is not always correct, and consequently, that it will yield only presumptive evidence, except when the characters are very strongly marked. Thus, in the *first* place, the change is sometimes far slower than he represents in his introduction; in Case 16, although the child had lived four days, the duct was only contracted at its aortal end. It appears, however, that in every case of natural respiration after birth, however short the interval was before death, the duct was either contracted at its aortal end, or along its whole course, so as to be at least intermediate between the pulmonary trunk and branches. Hence, *if the duct is equal in size to the pulmonary trunk, and is not contracted towards the aorta, the child must have been still-born.* But *secondly*, the duct may be intermediate in size betwixt the pulmonary trunk and branches, although the child did not breathe; and consequently, the converse of the foregoing proposition does not hold. Of twenty-six cases, which were accurately examined as to this particular, there were fourteen in which the duct was equal in size to the pulmonary trunk, and greater than the pulmonary branches; but in six of the remainder it was intermediate between the two; in four it was less than the trunk and equal to the branches; and in two it was contracted at its aortal extremity. Our author, indeed, attempts to get rid of three of these contradictory cases, by saying, that although the child was born dead, it must have breathed before delivery; and the results of the other tests, we think, justify this conclusion in two of the three, but certainly not in the third. He likewise attempts to get rid of three others, by insisting that they must have breathed a little after birth. It would be more correct, however, to have said that the heart must have pulsated a little during artificial inflation of the lungs, a circumstance to which we have already alluded as being possible, and well calculated to render other tests as well as the present ambiguous. This certainly appears to have been the fact in two of the three cases he alludes to; but it is not likely in the third. Even abstracting the four cases thus accounted for, it follows, that in seven still-born children the duct was less than the pulmonary trunk, and in one it was contracted towards the aorta. Hence, even this last circumstance, which, on the whole, we consider the most characteristic form of the *Vienna* test, (as one of Bernt's pupils very properly proposes to call it,) is not altogether without fallacy. At the same time, it must be allowed that, *if the duct is either contracted towards the aorta, or much less than the pulmonary trunk, the presumption is that the child breathed* either before or after birth. We have already seen, that cases of respiration before birth, can occur in medico-legal cases only when the labour has been tedious.

The result of this whole investigation into the tests of life after delivery, is, that the medical jurist may ascertain, 1. The colour of the lungs. 2. Their state as to consistence, vesicularity, crepitation when cut, and susceptibility of yielding air-bubbles when squeezed. 3. Their state as to buoyancy. 4. Their absolute weight and ratio to the weight of the body. 5. Their volume in relation to the diaphragm and pericardium, and the state of expansion of the lower edge of the left upper and right middle lobe. 6. The state of the arterial duct in respect to its own uniformity of diameter, and in relation to the pulmonary trunk and branches.

The following general rules may likewise be laid down, regarding the force of the inferences drawn from these six tests.

If the circumstances are such that respiration might have taken place before delivery, none of the tests can prove that the child outlived birth, but they can prove that it did not. *If the lungs may have been artificially inflated*, the first, fourth, and sixth, even separately, but still more when combined, will always furnish *strong presumptive* proof either of the child having survived birth, or of having been still-born; and *in some circumstances*, the sixth will afford *certain* evidence that it was still-born, and the fourth that it was not. *If the circumstances are such that the child could not have breathed before delivery, and that artificial inflation could not have been practised*, the first test, or the fourth, or the sixth, may singly give presumptive evidence on either side; and *the second, third, or fifth, when used with certain, easy, and obvious precautions, will singly give decisive evidence on either side,—the second and third in all, the fifth in most cases.*

The last and most important rule, which we would impress forcibly upon every practitioner, is, that as respiration before delivery is a fallacy which can very rarely occur in medico-legal cases, and can never occur without its being known to the inspector,—and as artificial inflation is not likely to be resorted to by the prisoner herself (for it is not enough that it is pleaded by her counsel) in her defence—it follows, in the first place, that a careful inspector *will always know when a case is doubtful, and thus can never fall inadvertently into error ;* and secondly, *that in a very great proportion of cases indeed, he can pronounce positively whether the child outlived birth.*

It would have been an object of some consequence to illustrate these rules by short references to some of Bernt's admirable cases. But this article has already extended to such a length, that we must be contented with giving two pointed examples of a complicated nature.

In the first case, the circumstances were quite unknown; but it was nevertheless not a medico-legal one. The body was fresh, and weighed 81½ ounces. 1. The right lung was pale-red, the left dark-red. 2. Both were everywhere vesicular, crepitated when cut, and gave out froth when squeezed. 3. Their specific gravity was so low as 0.491, and every fragment floated, even when strongly compressed. 4. The ratio of their weight to that of the body was 1 to 122; yet, 5. They were not mal-conformed, as they covered the whole of the sides of the pericardium and almost the whole of the diaphragm. 6. The arterial duct was equal in size to the pulmonary trunk, much larger than the pulmonary branches, and not contracted near the aorta. *Decision.*—The child was still-born, and the lungs were inflated artificially.

The second was a medico-legal case. The body was quite fresh, pretty fat, and weighed 93½ ounces. 1. The convex surface of the lungs was scarlet, the internal and inferior surfaces grayish-red. 2. Their substance was everywhere vesicular, crepitated when cut, and gave out froth when squeezed. 3. Their specific gravity was 0.801, and every fragment floated high. 4. The ratio of the weight of the lungs to that of the body, was 1 to 52. 5. The lungs covered the sides of the pericardium and diaphragm entirely. 6. The arterial duct was considerably less than the pulmonary trunk, and the pulmonary branches were equal to a goose-quill in size. *Decision.*—The child must have outlived delivery. The body presented various marks of external violence. The decision, in our opinion, is rather strong. The inspector was not aware whether or not artificial inflation was pleaded in defence by the prisoner; and therefore the state of the lungs as to colour, and the state of the arterial duct, furnished only presumptive evidence that the lungs had been dilated by natural breathing.

Art. IV.—1. *Remarks on the Merits and present state of Vaccination, wherein the Objections of the Antivaccinists are considered.* By Robert Lewins, M. D. &c. Edinburgh, 1825. 8vo. pp. 80.

2. *Thoughts on Vaccination, and the cause of its failing to afford the same protection against Variola, as formerly.* By John M'Ghie, Surgeon, Royal Navy, and Corresponding Member of the Chirurgical Society of Geneva. Dumfries, 1825. 8vo. pp. 38.

3. *A Letter to Sir Henry Halford, Bart. President of the Royal College of Physicians, proposing a method of Inoculating the Small-pox, which deprives it of all its danger, but preserves all its power of preventing a second attack.* By R. Ferguson, M. D. Member of the College of Physicians of London and Edinburgh. London, 1825. 8vo. pp. 38.

It is rather a curious example of the narrow foundation on which the confidence of authorship may sometimes rest, that of the many writers who fancy themselves qualified to instruct the public on the problematical points of the subject of vaccination, few seem to touch the real merits of the question which they undertake to agitate. All seem to be aware that vaccination, though a good thing in the main, has, nevertheless, certain weak points, and is liable to certain objections; but it appears to be the lot of few, indeed, to appreciate its peculiar advantages, to understand wherein they consist, and to explain them perspicuously to those whose situation in society renders such an explanation particularly necessary.

Here, for example, are two essays on vaccination, the authors of which are manifestly aware that the practice is not free from objection, and that the public are aware of the same fact; and who have taken up the pen, with the laudable intention of explaining its true merits, and eradicating all prejudices from the minds of the uninformed. The performance of such a task, it might be imagined, could not be difficult; since all the materials had been already collected in the writings of Thomson, Cross, Stoker, and others; and all that was requisite, was a short and clear exposition of the probable evils which might be apprehended from the neglect of vaccination, and of the certain advantages resulting from its employment. But whether it be, that the business is actually attended with greater difficulties than is generally believed, or that it has not, on the *present occasion*, fallen into proper hands, it is certain that after much more writing and reasoning than was requisite, it is impossible to discover any firm array of arguments, sufficiently forcible to make an impression on the mind even of a philosophical sceptic.

In the "Remarks" of Dr Lewins, the reader will meet with a discussion somewhat elaborate. The author does not confine himself to the subject of the merits and present state of vaccination, and the objections of the antivaccinists, as is avowed in the title-page; but he takes a cursory view of the history and effects of small-pox, gives a succinct history of vaccination, and examines the proposal of substituting variolous for vaccine inoculation. It is almost superfluous to remark, that in a work of such limited compass, a good deal of this was quite irrelevant, and by no means pertinent to the subject under consideration; and a necessary consequence is, that the main question regarding the utility and actual advantages of vaccination, is very imperfectly treated, and very indistinctly explained.

We think we are not far wrong when we assert, that no one will look for historical information on the prevalence of small-pox, or the progress and diffusion of vaccination, in a treatise of the nature of that of Dr Lewins; and if any thing is wanted on this head, after the popular and well-written sketches of Mr Moore, or the elaborate researches of Dr Thomson, an indispensable property must be, to present, in a very small space, and in an agreeable form, the leading heads of information contained in the writings of both these authors. Neither in the first, nor in the second section of the "Remarks," can this be said to be accomplished; and these histories consist of one or two chronological facts, glaring with false and misplaced eloquence,—embellished with a few pathetic apostrophes on the marring of the human countenance by the corrosive ulceration of small-pox,—and on the "wicked obstinacy, apathy, ignorance, malice, superstition, and misrepresentation," with which the practice of vaccination continues in many places to be opposed.

Nor has the author displayed more judgment in the introduction of long and diffuse extracts from the writings of Dr Jenner and Mr Bryce, when treating of the causes of the apparent failure of vaccination as an antivariolous preservative. This is, no doubt, a very easy method of getting up a book. But, while it saves the author much trouble in studying his subject, condensing his matter, and exhibiting general results in small compass, it leaves the reader quite as much to do as if he had still to peruse the original authors,—and completely *fails in* effecting the great object which ought to be kept in view *in every* publication like the present—precise information in a *condensed* and agreeable form.

In short, we regret to remark, that Dr Lewins has completely deformed his work, small as it is, by his attachment to quotation and extracts, and extracts, too, of the worst possible kind. What, for instance, can be more unseasonable, or can tend less to influence readers of any sense, than the bombastic and ridiculous quotation from Dr Lettsom, misnamed an ardent and affecting appeal, with which Dr Lewins concludes his fifth section on the protecting power of vaccination? Dr Lettsom was a worthy and zealous member of the Society of Friends;—a tolerable sort of good physician, who had, by simplicity of manners, quaker costume, and singularity of appearance, glided into the odour of popularity with a numerous and respectable part of the London society—and was, at least, zealous, if not judicious, in his efforts to promote the practice of vaccination. But, as for writing well, when he wished to be fine—why, he knew as much about it as Dr Solomon; and, with the exception of some few papers in the Memoirs of the Medical Society, it would puzzle his best friends to point out any thing which he had ever done, proportionate, in any degree, to the living reputation which he was so fortunate as to enjoy.

The "Thoughts" of Mr M'Ghie are shorter, and certainly more directly confined to the subject proposed, viz. to explain the cause why vaccination fails, or has failed, to afford the same protection against small-pox as formerly. Mr M'Ghie, in the first place, attempts to show, from the researches of various authors, but more particularly from the reports of the different colleges, that vaccination does not furnish the protection against small-pox which it did at its first introduction, (p. 22 and 23;) and, in the second place, he comes to the conclusion that this arises from some change which the properties and power of the vaccine virus have undergone in passing through the human body. The only reason which we can perceive he assigns for this opinion is, that it fails to produce the same effect as formerly on the human constitution, and therefore fails in affording the security which it formerly did against the attacks of small-pox. We believe it will require little sagacity to discover that this learned author plays a sort of game at odds and evens with the two propositions of the fact and its alleged cause; or, in other words, commits that paralogism, which logicians have denominated *reasoning in a circle*. The fact, as stated by Mr M'Ghie, as we shall afterwards show, and the cause which he assigns for it, are equally gratuitous assumptions. Vaccination is no longer, according to him, the antivariolous agent which it was once believed to be; and the reason of this is, that the vaccine matter has undergone some change, the proof of which again is, that it does not protect against small-pox. In all other respects we regret to observe that Mr M'Ghie is not much less successful than Dr Lewins, in enfeebling the force of his arguments by indistinct statements, and in wearying the attention by spreading his matter over a much wider space than was requisite. If we are not mistaken, his proposal of inoculating an equal number of children with vaccine virus, taken from the human subject and the lymph of the cow-pock, as it is found on the teat of the cow, (p. 35 and 36,) was put in practice some years ago by the learned author of the History of the Varioloid Epidemic, and the result was, that no possible difference of effect could be recognised.

But if the Jennerian discovery derives little advantage from the services of these authors, it appears to be still less beholden to the next labourer in the field of injury. Dr Ferguson not only admits that the powers of vaccination were overrated at first introduction, but adopts the general accuracy of the inferences of Mr Brown of Musselburgh, regarding the gradual diminution of its antivariolous power after insertion. Though not prepared to go so far as that gentleman in confining the influence of vaccination either to a triennial, a quinquennial, or a septennial period, he however agrees with him in thinking, that the protection derived from the vaccine disease is, in many cases, only temporary, and that it is always less powerful at a distant, than at a short interval from the date of vaccination.

As an antidote, therefore, to all the supposed objections against vaccination, and all the real evils of small-pox, Dr Ferguson announces, in a letter addressed to the president of the Royal London College, a method of inoculating the small-pox, "which deprives it of all its danger, but preserves all its power of preventing a second attack." If this rouses the curiosity of our readers, they must not be disappointed when they are informed, that this method is neither more nor less than inoculating with a mild, that is a modified form of small-pox, and afterwards vaccinating to render it still milder, and to increase security. The gravity with which this proposal is brought forward, and the elaborate manner in which its advantages are attempted to be demonstrated, form so striking a contrast with its nature, that it is not easy to believe that the author can be serious in requesting the attention of the learned president of the most learned body in the profession, to a subject so simple and obvious.

But, if the proposal of Dr Ferguson is to be viewed in any other light than that of a *jeu d'esprit*, it is by no means easy to discover any advantages by which it may recommend itself. An obvious objection must appear in the constant propagation and *diffusion* of the variolous poison; and this objection is not diminished, by saying that it is the principle of the method to induce a mild or modified form of the disease. Nor is it any recommendation of the plan, to say that it had been thought of by others, as Dr Ferguson has done, (p. 23;) for this proves only, that they no sooner thought of it, than they were aware of its objections, and therefore did not attempt its application to practice; and, in point of fact, Dr Willan anticipated the objection which we have already mentioned, viz. the dissemination of variolous contagion, and therefore regarded the plan as inexpedient. In short, the proposal of Dr Ferguson would have the effect of counteracting the entire benefits which have ever been derived from the practice of vaccination; and though it may be excusable enough to connive at it, or even allow its performance as a *pis aller*, in situations in which the neglect or the tardy performance of vaccination presents no other alternative, it would argue the most wilful and preposterous folly to adopt it as a general practice, and to act on it as an invariable custom.

It demands no long inquiry to perceive, that both Dr Ferguson and Mr M'Ghie have fallen into mistaken notions regarding the actual merits of vaccination; and the work of Dr Lewins is not the one which will act as an antidote. We do not presume to think that we can rectify all the misconceptions which prevail on this subject; much less do we feel competent to exhibit a just and perfect view of it in the few pages which we propose to devote to its consideration. But we may, perhaps, render some service not entirely useless, if we attempt to show in what light the practice of vaccination and its effects ought to be viewed; and this we shall shortly do under the two simple and intelligible heads of its advantages and its alleged disadvantages.

I. In order to form a just estimate of the real advantages resulting from the introduction of the practice of vaccination two errors must be avoided. It must neither be represented as an infallible and absolute preventive of small-pox; nor must it be reprobated as an idle ceremony, or an injurious practice. When it was first recommended to professional attention, its natural history was but imperfectly known; and the laws by which its operation on the animal frame is regulated, were still unexplored. Three errors were committed. It was supposed to be a variety of small-pox;* it was thought to be communicable by effluvia without contact; and its material cause was believed to give rise to an eruption over the whole cutaneous surface. Thus

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* "The vaccine *variolae* and the human *variolae*," says Woodville, "ought therefore to be considered as only varieties of the same disease, rather than as distinct species." (p. 153.)

Woodville committed the mistake, of supposing that the vaccine virus was to cause a general eruption over the skin like small-pox; and there is reason to conclude that Jenner, when he first announced his discovery to the world, was not entirely free from the same error. It is now known that the vaccine virus is quite distinct from the small-pox poison; that it operates in consequence of direct local application only; and that it produces a local action, and never a general one.

Well-established as these facts at present are, they were entirely unknown at the first introduction of vaccination, and for some years after. The first consequence of this imperfect knowledge of the nature and properties of cow-pox was to represent it as a certain and infallible preventive of the operation of small-pox on the human frame; because,—it was argued, in the spirit of the Hunterian doctrine, and Jenner, it will be remembered, was a house-pupil of John Hunter, the action of the morbid poison of small-pox was incompatible with that of cow-pox in the same individual. Some time elapsed before it was discovered that this conclusion was too general; and that to ascribe to cow-pox the power of invariably and absolutely preventing the operation of the small-pox poison, was to rate its powers at a higher standard than was warranted by fact and experience.

When it was at length demonstrated that instances of small-pox did take place in the persons of those who had undergone the vaccine disease, they were ascribed to some imperfection of the vaccine action,—arising either from the use of spurious matter, from a careless and improper mode of communication, or from the cutaneous system and the general habit of the individual not being in a proper state for admitting its full operation. The influence of these causes in producing a spurious disease, and consequently an action incapable of counteracting the variolous, was doubtless considerable, and might account for several of the instances of small-pox occurring in the persons of the vaccinated; but it was greatly overrated. Thus, though certain examples of small-pox in the persons of those who had been vaccinated during the early period of the practice, were justly attributable to the insertion of common purulent matter instead of pure vaccine lymph, or to the co-existence of some cutaneous eruption which rendered the skin insusceptible of the vaccine action, or to some injury done the vesicle after its operation, *e. g.* too early or too great abstraction of lymph for the purpose of communicating the disease to other subjects,—other examples were remarked by competent observers to take place when none of these causes was known to exist.

When the occurrence of small-pox eruptions, therefore, in the persons of those who had undergone previous vaccination in its most perfect form, and under the most favourable circumstances, could not be denied, two explanations of the fact were given; the first that they were the eruption described by Heberden under the name of *Chicken-pox;* the second, that they were a variety of small-pox modified by the vaccine action. To fix the characters of the former disease on a more firm foundation, and to enable practitioners to distinguish it with greater certainty, Willan examined the characters of the eruption anew, and gave what he conceived to be a more accurate description of the three forms which it assumes, than had hitherto been done. It had never been denied that chicken-pox did attack both those who had undergone small-pox and those who had been subjected to the vaccine disease; or, in other words, that neither natural small-pox, nor vaccination, prevented an attack of chicken-pox; and so long as the latter disease was regarded as specifically distinct from small-pox, to which however it bore a close resemblance, it was not unnatural to apply the name of chicken-pox to many cases of small-pox in the persons of those who had been vaccinated in a satisfactory manner. Where the characters of the eruption were so remote from those of chicken-pox as to render this explanation inadmissible, the supposition of a modified form of small-pox was entertained as the effect of the inefficacy of the vaccine action; and this was never regarded as an objection of any weight by the unprejudiced part of the profession, who remembered the certain evils of unmitigated small-pox, and who were content with diminishing them as far as possible, if eradication proved to be impracticable. It was somewhat extraordinary that the authors of this hypothesis did not perceive that the mere admission of modification implied, in some degree, what has since been established by observation,—that the occurrence of cow-pock in any individual did not positively and absolutely preclude an attack of small-pox in the same individual.

In this state, therefore, matters remained with regard to vaccination till 1816, when the occurrence of a small-pox epidedemic, very comprehensive and general in its attacks, subjected the practice to the severest test it had undergone since its introduction. Its influence over small-pox had formerly been rated much above its real value. This influence was now in equal danger of being depreciated far below the truth. Experience however lent its aid; and we may now be said to be in possession of most of the elements, so far as human wisdom can foresee, to determine aright the actual and genuine influence of the vaccine disease over small-pox, and the degree of protection which the former affords against the attacks and evils of the latter. Of the facts then collected, compared with the experience of the first vaccinators, the general results may be stated in the following manner:

First, Though the action of cow-pox on the human body renders it very nearly, if not altogether insusceptible of inoculated small-pox, it does not extinguish its susceptibility to that of small-pox in particular seasons, at least when it is received through the medium of atmospheric contagion. (Thomson, p. 87, 42.)

Secondly, The action of cow-pox diminishes this susceptibility very considerably, and renders the action of small-pox on the human body, when it takes place, greatly less severe, changing very completely the character of the disease, and depriving it of its usual malignity. (Thomson, p. 87.)

Thirdly, One attack of small-pox diminishes, but does not extinguish the susceptibility to a second attack in the same individual. This second attack may appear either in the form of regular small-pox, or in the anomalous or spurious forms, to which the names of chicken-pox,[*] sheep-pox, swine-pox, wind-pox, siliquose-pox, bladder-pox, &c. have been applied. In general, if the first attack is regular small-pox, the second is one or other of the irregular forms, and *vice versa.* Early life predisposes to these attacks. In the last epidemic they occurred chiefly in subjects under ten years of age.

Fourthly, The full and complete action of cow-pox diminishes the susceptibility to small-pox, and modifies the action of small-pox in a much greater degree in the majority of cases, than a previous attack of small-pox does.[†] (Bryce apud Thomson, p. 60.) There is no fact, or collection of facts, which warrants the conclusion, that this modifying or controlling influence of the vaccine action is influenced by the interval of time from the date of vaccination. (Thomson, p. 34.)

Fifthly. While the practice of inoculating small-pox continues, it is injurious in perpetuating and disseminating the infection of a dangerous, a severe, and not unfrequently a fatal disease.

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[*] "In a considerable number, the eruption, in its appearance and duration, has resembled the affection which has usually been described as chicken-pox, both in its vesicular and pustular forms." Thomson, p. 30.

[†] "Small-pox modified by previous small-pox infection, have appeared to me to be in general more severe than small-pox modified by vaccination; and, accordingly, the number of deaths has also been comparatively much greater. For while natural small-pox in the present epidemic have proved fatal nearly in the proportion of 1 in 4, and secondary small-pox in the proportion of 1 in 25, (or at most, 1 in 75) small-pox after vaccination have proved fatal in one instance only, of above 330 cases which have now come under my observation." Thomson, p. 202.

"That while the epidemical small-pox which have prevailed during the last seven years, have been every where of a most malignant kind, destroying a large proportion of the unvaccinated attacked by them, very few examples have occurred of their having proved fatal in those who had gone through the process of vaccination." *Historical* Sketch, p. 391.

Sixthly, The substitution of cow-pox, by diminishing the extent of the operation of this infection, tends indirectly to diminish the disease which it generates, and the evils resulting from it.

These inferences are established on grounds so satisfactory and undeniable, by the researches of Dr Thomson, Mr Cross, Dr Stoker, Dr Barnes, and others, that it is quite superfluous to adduce the actual proofs of their accuracy. We wish, however, to correct certain vulgar errors, which, like all other errors, originate in imperfect acquaintance with the history and facts of the subject, and partial and erroneous views of its effects; and this suggests, naturally enough, the observations which we have to offer on the alleged disadvantages of vaccination, or the objections which have been urged against the practice.

II. The objections of the antivaccinists, as they are named, or, to speak more generally, the objections against vaccination, may be stated in a few words. Either, it may be argued, the influence of vaccination over small-pox is naught, is feeble and temporary; or, by the introduction of vaccination, other diseases of infancy and childhood, it is pretended, are rendered more frequent, more severe, and more fatal.

The first of these assertions, regarding either the inefficiency or the temporary influence of vaccination, has been so fully and satisfactorily refuted by the experience of the last varioloid epidemic, that it must betray equal effrontery and ignorance to maintain it in the face of the strongest evidence. Without adverting to the evidence collected by Jenner and his followers, to establish the general fact of the control which cow-pock exercises over small-pox, we have the direct testimony of Dr Thomson, Mr Cross, Dr Barnes, Dr Stoker, and many other observers, to prove that, in persons who had been vaccinated in a satisfactory manner, the influence of the vaccine disease appeared most unequivocally in the mild and modified form which the small-pox assumed. This was so much more manifest, because, during the same time, an opportunity was afforded of contrasting this mild and harmless disease with the severe, malignant, and very often fatal cases which occurred in the persons of the unvaccinated.*

1. No fact is established with greater certainty, than that of the influence which cow-pock exercises in mitigating the severity of small-pox. It was the boast of those who introduced the practice of inoculating small-pox, that they were thus enabled to deprive the disease of all its terrors, and above all, to prevent it from committing those frightful ravages on the human countenance, which not unfrequently rendered the sparing of life an object little to be desired. It was chiefly by appealing to this

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* Thomson, p. 33—43.

natural and universal sentiment, as exemplified in the security which it gave to the faces of the Georgians, Circassians, Armenians, and other Asiatic nations, that the ingenious authoress of the practice succeeded in diffusing its benefits among the higher ranks of English society; and so effectually does it appear to have answered expectations, that a dramatic poet of the last age makes one of his lady characters exclaim against the mortifying equality which had thus been introduced among the faces of the female world. "I vow, since inoculation began," exclaims Mrs Hardcastle to Hastings, "there is no such thing seen as a plain woman; so one must dress a little particular, or one may escape in the crowd." * Much, however, as the artificial communication of the disease contributed to obviate the evils of natural small-pox, and prevent the deformity and mutilation of the human countenance, its influence was still very partial; and instances of the deep-pitted skin, the corroded nose, and the loss of one or both eyes,† were neither uncommon nor difficult to be seen, not only long after the introduction of inoculation, but even after that of vaccination. It is only since the latter practice began to be extensively adopted, that the complaint of Goldsmith's lady can be said to be well-founded; and we now trace the lamentable effects of unmitigated small-pox on the faces of those only who had been born previous to the introduction of vaccination, or who, though born since that era, have not enjoyed the inestimable blessings of the practice.

But the reality of the influence of cow-pock on the human body is demonstrated not only by the modification which it communicates to small-pox, but also by that which it exercises on its own action. When cow-pock has been once communicated, and the vaccine action has been once fully established in the system, though it may be communicated a second, a third, or greater number of times, its effects never assume the same perfect form in which they originally appeared, but invariably a modified shape. In short, as a primary attack of small-pox imparts to the system a peculiar power of modifying every subsequent attack, so the first communication of cow-pock induces some change, in consequence of which every future communication of the disease differs materially from the first. This is the principle of the operation of the *Test-Pock* of Mr Bryce, which bears, as Dr Thomson has justly remarked, the same relation to primary cow-pock, which secondary or recurrent small-pox bear to the primary form of that disease. "Cow-pox modify cow-pox, as small-pox modify small-pox; and these diseases produce each a diminutive or spurious pock, on being reciprocally modified by one another."

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* She Stoops to Conquer, or the Mistakes of Night, by Oliver Goldsmith, London, 1772.

† "It appears by a report of the hospital for the Indigent Blind, that two-thirds *of those* who apply for relief have lost their sight by the small-pox."—Select *Dissertations* by Sir Gilbert Blane, p. 343.

2. To demonstrate the great difference between the fatality of small-pox occurring after vaccination, and that which takes place secondarily, or after small-pox either natural or inoculated, it need merely be mentioned, that while the proportion of deaths during the late epidemic by the latter disease was 1 in 30, or 2 in 71, it was in the former case only 1 in 484. * It may farther be shown, from the observations of Mr Cross, that in the city of Norwich, the proportion was very nearly the same, or 1 in $329\frac{61}{91}$, —a coincidence which, so far as the experience of that epidemic goes, must be admitted as a strong proof of the accuracy of the observation. As these results are obtained from the average of small communities, it is by no means improbable that, in future epidemics, even this small proportion of deaths among the vaccinated will be found to diminish.

We cannot quit this part of our subject without a few observations on an opinion which has been advanced more than once by many in the course of this discussion, and for which greater attention has been claimed by its partisans than it is by any means entitled to receive. It has been asserted, we have seen, by Mr M'Ghie, that the vaccine lymph or *ichor* as he names it, has undergone some change in constitution and properties, and that it is in consequence of this change that it is no longer able to protect those who undergo vaccination from attacks of small-pox. Now we have no hesitation in saying, that this is uttering two gratuitous assumptions in a single breath, both of which may be speedily and satisfactorily contradicted by appealing to the historical facts of the case.

In the first place, though it is difficult to see how it could be determined either in the affirmative or the negative, that the vaccine lymph had undergone any change in constitution or properties, or, in short, had become deteriorated, unless by looking to its physiological effects upon the animal body; yet it may be justly asserted, that there is not the slightest proof, either in the way of fact or specific experiment, that any deterioration has taken place. So far as sensible observation can be trusted, it produces the same sensible effects on the skin, and presents in other respects the same properties at the present day, which it did in 1799 and 1800. "I know, in point of fact," says Dr Thomson, "that the vaccine virus which has been used at the Royal Public Dispensary here and in other parts of Scotland, for a series of eighteen years, still continues to produce, in those who are inoculated with it, the very same appearances which it produced on the first trials that were made with it, and that these appearances agree exactly with those which have been delineated and described by Dr Jenner, as characteristic of cow-pock; and I know also, that the appearances of the vaccine vesicle produced by this matter, which must have passed through a succession of at least nine hundred individuals, agree exactly with those exhibited by vesicles produced by inoculation with the more recent equine matter with which I have been lately favoured by Dr Jenner."*

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* Historical Sketch, p. 279.

But the mere supposition of such deterioration is inconsistent with every thing which we know of the history and effects of morbid poisons. It is an undeniable fact, that the poison of plague, of small-pox, of syphilis, of measles, and of scarlet fever, produce at the present moment the same morbid effects which they did centuries ago, during which time they have not only passed through the systems of many thousand individuals, but have had longer or shorter periods of suspension, cessation, and quiescence, during which they must have been liable to every deranging casualty, or even to complete extinction. As the respective poisons of these diseases have preserved all their qualities, therefore, during so long a period, and notwithstanding all the efforts of physicians to change if not to extinguish them, it is difficult to suppose that another morbid poison, which has been known among us not much longer than the fourth of a century, and which has been ever sedulously preserved, should have undergone any material change, notwithstanding our efforts to the contrary.

In the second place, we have to inform Mr M'Ghie, that the supposition of a change in the antivariolous power of cow-pock is inconsistent with the historical facts of the case. It is not the fact that vaccination fails to afford the protection against small-pox which it once did. Vaccination never afforded perfect or absolute immunity from small-pox contagion; and it furnishes, at the present moment, as great and as complete security against small-pox, as it ever did. Its influence was indeed exaggerated, and it was supposed to be an absolute preventive of small-pox, because persons who had undergone vaccination, were found insusceptible of the inoculated small-pox. At the era of the introduction of vaccination, it so happened that no great small-pox epidemic existed, and there was consequently little or no atmospheric contagion to communicate the disease in the most effective mode. The only instances of the disease were local and sporadic; and these were insufficient to charge the air to such extent as to spread the disease. In such circumstances, it was easy to overrate the antivariolous power of cow-pock, and to ascribe to it the power of counteracting small-pox contagion, when, in point of fact, it did nothing but render the system insusceptible of receiving the disease by inoculation. As soon, however, as these vaccinated subjects were exposed to the operation of a highly variolated atmosphere, which was daily becoming more concentrated by the successive multiplication of new sources of contagion, in the form of small-pox cases, the actual influence of cow-pock, in resisting the progress and effects of variolous contagion, began to be more distinctly and accurately understood. It was then ascertained, not that vaccination had lost its power, but that it never possessed any more than a relative influence over small-pox. The correctness of this conclusion appears not only from the results of the experiments performed by Dr Woodville, in the small-pox hospital of London in 1799, but from the phenomena of the epidemic of 1816, 1817, and 1818, in various parts of the country, and even in several countries of Europe. It was then observed, that the persons who had undergone vaccination, at the time when the practice was first introduced, and who consequently had been vaccinated by lymph, which, according to the hypothesis of deterioration, must have been in its original purity and strength, were not less liable to small-pox, and suffered the disease in no less severity, than those who had been vaccinated only a few months before, and at all intermediate periods. Dr Thomson states that he had seen several instances, and heard of more, in which the varioloid disease, during its prevalence in Scotland, had attacked individuals who had been inoculated at an early period of the practice, with cow-pock matter obtained from the most authentic sources.* On the whole, the conclusion is irresistible, that, unless it could be shown that the occurrence of small-pox in the persons of the vaccinated, was confined exclusively to those who had been subjected to this process during the latter years of the practice, the hypothesis of deterioration in the lymph, and change in its properties, is entirely inadmissible, and must be rejected.

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* *An* account of the Varioloid Epidemic, &c. by John Thomson, M. D. &c. *p. 315.*

With regard to the temporary influence of the vaccine disease over small-pox, and the fancy of assigning it a dominion limited to the duration of three, five, or six years, proposed in no diffident tone by an active antagonist of the practice, † we

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* Account of the Varioloid Epidemic, p. 316.

† "3. That, about *three* years after vaccination, the constitutional influence is so much diminished, as readily to allow the operation of variolous contagion, but still exerting a considerable effect in mitigating the disease.

"4. That, at the distance of *five* or *six* years from vaccination, the facility is so much increased, as hardly to impart any security; and so much diminished in its can only say, that we never heard of any thing half so absurd; and we always imagined that it was too ridiculous to be entertained for a moment, till we actually found persons, of no ordinary intelligence in other matters, interrogating us seriously as to its truth. But we have been undeceived, even still further, on the degree of influence which this opinion has acquired. By no means abandoned as an amusing play-thing to extra-professional persons and general readers, it is substantially adopted by Dr Ferguson, as the basis of his objection against the practice of vaccination; and, like other erroneous principles, forms the foundation of a very erroneous theory. It is needless to say, that if Dr Ferguson had not erred in principle, he would not have proposed a practice so injudicious; and that, if he had informed himself of the actual state of the fact, with regard to the permanent or temporary influence of vaccination, he would neither have come to the conclusion that its influence was temporary, nor would he have proposed as a substitute, the successive inoculation of variolous and vaccine matter. If the influence of vaccination be real at the end of three months, or of three years, it is equally so at the end of thirty; and it is quite inconsistent with all the known facts of its progress and effects, to suppose any thing like its *wearing out* of the system, when its effects have once been thoroughly impressed on it. Not the slightest shadow of evidence in favour of such a supposition could be obtained, either in the practice of the first vaccinators, or in the epidemic small-pox of 1816, 1817, 1818, &c. Persons were found in both periods to take small-pox as readily at the end of seven days and seven weeks, as at the conclusion of the mysterious cycle of seven years; and of those who had been vaccinated for eighteen or twenty years, neither was a larger proportion observed to be liable to small-pox, nor were they found to take them more readily, or in a severer form, than those who had been vaccinated for twenty months, or for twenty weeks only. Whoever doubts this, will find the most ample and convincing proofs of it in Dr Thomson's account of the varioloid epidemic. *

But Dr Ferguson is not consistent in his theory. If, according to his supposition, the influence of vaccination be temporary only, why use it at all? What good can result from the use of an agent, the power of which he thinks is diminished in the direct ratio of the interval from its application? We cannot

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powers of mitigating the disease, that, at this period, the cases very nearly approach to the most common form of the distinct disease." Inquiry into the Antivariolous Power of Vaccination. By Thomas Brown, Surgeon, Musselburgh. Edin. 1809.

* P. 34. *et passim.*

comprehend by what principle of reason or analogy its influence is to be temporary and useless when employed alone, but permanent and beneficial when preceded by small-pox inoculation. A much more plausible scheme would be to repeat the vaccination at the end of each period when it was supposed to have become effete or inert; and this method, which has been suggested also by Sir Gilbert Blane, would have the advantage of obviating any inconveniences which might result from the propagation of so dangerous a contagion as that of small-pox.

Not less unfounded, but still more absurd, is the foolish and ignorant assertion, that, in consequence of vaccination, the ordinary diseases of infancy and childhood are rendered more frequent, more severe, and more fatal. We took it for granted, that this idle and frivolous objection had been answered long ago by the actual experience of the benefits resulting from the diminution and mitigation of small-pox; and that even this last den of ignorance and prejudice had been rooted out by the diligence of Watt and Duvillard, or had been thrown into the dark abyss of oblivion with the maudlin dreams of Moseley, the frantic ravings of Rowley, and the preposterous hypocrisy of Birch. It is surely unnecessary to say, that, though vaccination has the power of rendering small-pox a mild and harmless disease, it can neither confer immortality, nor prevent the aggressions of the many maladies which the human race, by the immutable decree of heaven, inherits. It could neither extirpate scarlet-fever, measles, croup, nor hooping-cough; nor shield from the attacks of water in the brain, mesenteric tabes, white-swelling, hip-disease, or carious vertebrae. To these maladies all are more or less liable, in some instances to the degree of certainty, in others to that of probability only. And as the liability is greater, the younger the subject, the proportion of the young population of any community which vaccination rescues from death by small-pox, have to encounter all those disorders, certain or probable, from which vaccination affords no immunity. These diseases will, therefore, be more prevalent, because a greater proportion of young subjects are ready to undergo their attack; but neither is their proportion greater to the general mass of disease, nor is their proportional mortality greater to the general mortality, than previous to the introduction of vaccination. It is, however, quite unnecessary to prosecute this subject further at present. We had occasion, in a late article, to bring it before the notice of our readers, when speaking of the work of M. Casper. If any thing could be added to what was there adduced, it must be obtained from the examination of tables of disease and mortality, drawn up by different observers in different communities, in imitation of that author; and there is little doubt, that the conclusions hitherto formed will receive nothing but the strongest confirmation.

ART. V.—*Transactions of the Medical and Physical Society of Calcutta.* Vol. I. 8vo, pp. 409. Calcutta, 1825. London, Imported by Kingsbury, Parbury, and Allen.

THE perusal of this volume has afforded us much satisfaction. In the first place, it is a triumphant refutation of the observations in which some foreign travellers have lately indulged, on the state of professional education in this country, which their previous prejudices and hasty visit, commonly during the holidays, did not qualify them justly to appreciate. The best mode of education is undoubtedly that by which the scholars are best qualified for fulfilling the duties they have to discharge in the exercise of their profession; and that the medical officers in the service of the Honourable East India Company are eminently qualified, the present volume furnishes ample evidence. Now, when we consider the period of life at which most of these gentlemen are removed from the seats of European learning, and are left to their own powers of adding to their information according to the methods by which they have acquired what they already possess, they furnish a criterion of the real value of a professional education, purely British; and judging from this volume, it will not suffer from a comparison, in respect of practical utility, with that of any other country. In the next place, we rejoice to see that the enervating climate of Asia is not able to repress, or even to depress, the energies of our countrymen, when directed to the relief of suffering humanity, or the advancement of professional knowledge, even under the most disadvantageous circumstances. Lastly, from the specimen here exhibited, we anticipate with confidence the immense addition to our knowledge, which is likely to accrue from the impulse now given, and the example now exhibited. Notwithstanding many praiseworthy individual productions which have emanated from the East, our Indian possessions may be comparatively considered as a virgin field, which will yield to the labours of the cultivator the most luxuriant crops. Our professional brethren in India have the opportunity of observing the effects of climate on the human system, over an extensive and greatly varied portion of the surface of the earth, on distinct races of men, dissimilar in their food, habits and regimen. Not only are the *diseases* common to Hindoostan and Europe modified by these *general* causes, which assist in elucidating their nature; but epidemics are generated in tropical climates, which, fortunately, seem to be unable to exist in our temperate zone. The infinitely diversified products of the soil also furnish opportunities of extending our knowledge of alimentary and medicinal substances, as well as of the operations and treatment of poisons, both animal and vegetable; for, in general, the greatest activity is possessed by substances which are produced under the warmest sun. But a review of the contents of the volume will expose our views more satisfactorily than any general remarks we might make.

On the subject of *medical topography*, we have one of Meerut in the province of Delhi, by Mr Thomas Jackson, and another of Chittagong, by Dr Macdougall, with a meteorological journal kept at Goruckhpore by Mr Hezekiah Clarke. The situations of Meerut and Chittagong present a singular contrast.

Meerut is in central Asia, elevated many thousand feet above the level of the sea, clothed with the trees and shrubs, and bearing the fruits of Europe, and the establishment of a convalescent post on the neighbouring mountains is strongly recommended as a means of retaining a number of men some years longer in the service. It is also gratifying to be incidentally informed, that Government has been attentive, not only to provide facilities for healthy recreation to the soldiers, but has built a reading-room with an extensive collection of books for the *exclusive use* of the men. There is no disease endemial in Meerut, and the fever is synocha which is easily subdued by depletion. The 14th Regiment, during its three years' residence, lost annually about one man in sixty.

Chittagong, on the contrary, is a maritime situation, with marshy and thick low jungle, in which the rainy season lasts unusually long; in short, it is one of the most unhealthy in India to the up-country Seapoys, scarcely a single soldier escaping even for a few months from the endemic fever, which commences as a bilious remittent, passing in the course of a few days into regular quotidians, and then into tertians and quartans, sometimes with a typhoid character, and proving fatal to one in twenty-seven of those attacked. The most efficacious remedies were the red cinchona in powder, and the arsenical solution given in the infusion of the cherayta, (Gentiana.)

Epidemic diseases form a subject of inquiry nearly allied to medical topography, as the causes of the one are intimately connected with the circumstances of the others. In his observations on the epidemic cholera as it appeared in China, Dr Livingstone has confined himself to what he considers as new. He is satisfied that the disease in an epidemic form had not been in that part of China where he resides, Canton, within thirty years, till some time after it appeared in Bengal. It was observed on this occasion first in Tartary and afterwards in the north west of China, and it made its progress southwards by irregular leaps, destroying full half the number which it seized. It made dreadful ravages at Canton two or three years ago; and this year its mortality has been equally great in the Whampou district, although it has not been seen in Canton for upwards of twelve months. Dr Livingstone observed that those who slept in beds frequently escaped, while those who lay on the floor had the disease in its worst form, and he hence concludes, that the morbiferous cause does not rise many inches from the ground, and is led to recommend sleeping on beds sufficiently high, along with other prophylactic means. Galvanism was used in one case and apparently with great advantage. It appears that cholera morbus was described by Chinese medical writers at least as early as the days of Hippocrates, under the name of Ho-lwan, (start—confusion) and that the disease in its worst form had been formerly noticed in China.

Dr James Mellis has given an interesting account of an epidemic inflammatory fever, lately prevalent in Calcutta and its environs. So general an epidemic never perhaps occurred. Every individual within its range seems to have been attacked. It was therefore fortunate that its symptoms were mild, and that it scarcely ever proved fatal. Its sequelæ, however, were often severe, chiefly the debility and lasting pains in several joints large and small, sometimes in one finger. The only disease from which Dr Mellis thinks it necessary to establish a diagnosis, is rheumatic fever. Various opinions were entertained as to its causes; it appeared first at Rangoon, in Sir A. Campbell's army in the end of May, and at Calcutta in June, and it extended in various directions, not only to Chittagong but to the presidency of Madras. At Calcutta it was ascribed to the want of rain, but this does not seem to have been the case, and it is remarkable, that a large portion of the troops at Rangoon having been exposed on the 10th of June to incessant and heavy rain for twenty-four hours, the greater number were seized on, or even before, their return to quarters. It was more certain that an unusual proportion of sultry weather occurred, and Dr Mellis is inclined to consider the atmosphere being loaded with electric matter as one of the predisposing causes. The treatment, which succeeded, was depletory followed by tonics. The same epidemic as it appeared in Guzurat is described by Dr Kennedy, who is inclined to consider it as a mild scarlatina modified by tropical climates. "Reflecting on the appearance and mode of appearing of the cutaneous eruption; the rheumatic pains; the epidemic characters and the third day critical, with or without adding the tendency to cynanche and the succeeding unaccountable extreme prostrations of strength, I cannot, that I can recollect, seek for the same train of symptoms in any other disease."

Of sporadic diseases, Mr Burnard relates a case of fungoid disease in a native; Mr Playfair, some observations on delirium tremens; Mr Corbyn, a case of calculus, with adhesion to the internal coat of the bladder; Dr Adams, a case of aneurism of the aorta; Mr Campbell, a case of dry gangrene in a native; and Mr Breton, a case of recovery from a wound of the stomach by a pistol ball.

The only surgical contribution is a case of popliteal aneurism in a native, successfully treated by ligature, by Dr Macdougall.

On the subject of cutaneous diseases, we have a very learned paper on Kushta or leprosy, as known to the Hindoos, by Mr H. H. Wilson, who promises, at some subsequent period, a comprehensive sketch of the medical literature of the Hindoos. It contains a very curious account of the cutaneous nosology of the Hindoos, and of their aetiological doctrines, as well as many interesting notices respecting their Materia Medica and Pharmacy. With this paper, we would recommend those who are interested in the subject, to compare "Observations on the Lepra Arabica, or Elephantiasis of the Greeks, as it appears in India," by Dr Whitelaw Ainslie, the learned author of the Materia Medica of Hindoostan, published in the Transactions of the Royal Asiatic Society of Great Britain and Ireland, vol. i. An instance of a very singular pedicular eruptive disease is described by Mr J. A. Sinclair, but we must regret that the kind of insect was not ascertained. On the Guinea worm there are three papers, all furnished by medical officers at Bombay, Dr Kennedy, Dr Smyttan, and Mr Bird; and the thread-worm, found in eye of the horse, is described by Mr Breton and Mr Twining, whose paper has already been noticed by us. Dr Adam has given a history, with a plate, of an instance of hypertrophy of the skin in a Hindoo, partially cured by operation. A remarkable case of this singular malformation in a European is recorded in John Bell's Surgery.

Mr Breton has given the detail of a fatal case from the bite of a venomous snake, *Siáh Chânda* or *Amaitra*. A ligature was immediately tied above the part, and ammonia freely exhibited.

"It is worthy of remark, that the action of the poison was not manifested till upwards of an hour after the bite was inflicted, and that the virulent effects of the venom did not remain longer than an hour and a half. Thirst was not at any time complained of: the *symptoms evident,* were pain and a tingling sensation in the bitten leg; sickness and vomiting; dimness of sight; suspension of the circulation; loss of sense, and convulsions. Although the active effects of the poison were actually counteracted, and apparently subdued, death took place at the expiration of about seventeen hours after the leg was bitten,—a melancholy proof of the insecurity of even an approved remedy against the poison of serpents." (p. 58.)

Mr Tytler details three cases of foul and inveterate ulcer, consequent upon the bite of the Ceylon leech.

As might have been anticipated, there are few papers on physiological or pathological subjects; but Dr Adam met with a case of oil observed after death in the blood of a man who had gone to bed in the barrack-room, apparently in good health, and was found in the morning lying dead on his couch. He was rather corpulent, and had been engaged in a quarrel the preceding evening. Our readers will recollect Dr Trail's notices of oil in the blood of living individuals, and when Dr Adam's observation was read in the Calcutta society, Mr Hodgson, a veterinary surgeon, stated that he had more than once observed a similar oil in the blood of the horse. Mr Baker gives an account of a singularly small child of European parents, whose children were very fair. Its birth was premature, supposed to be in the middle of the seventh month. At the time of the description, it was a month and twenty days old, and weighed exactly one pound thirteen ounces, and was fourteen inches in length, and it was then sucking well.

There are three papers on subjects of Natural History. On the appearance of Locusts in the Doab, by Mr Playfair; on a Luminous appearance of the Ocean, by Mr Henderson; and a description of the Adjutant bird of Bengal, by Dr Adam.

The communications on Materia Medica are numerous and interesting. Mr Annesly has published observations on the use and abuse of calomel, which he has also appended to his work on cholera formerly reviewed. By comparing the stomach of the dog killed in perfect health, with its appearance after calomel had been given in doses of different quantity, he concludes, that the natural and healthy state of the stomach and intestines is high vascularity, and that the operation of calomel in large doses is directly the reverse of inflammatory. He has also suggested a hypothesis, that calomel acts upon the secretion of the liver, both chemically and mechanically.

Dr Adam has made some observations on the exhibition of phosphorus in cholera morbus. In the first case, it was given in the solid form, rolled up in small portions of soft bread. The dose was two or three grains, frequently repeated. Its effects were not very evident, and the case proved fatal. On laying open the stomach a dark reddish colour was observed towards the cardiac orifice, and a greater portion of mucus was effused than is commonly met with in cases of the disease. In the second case, it seemed to have good effect in exciting the patient from a state of extreme collapse, and he ultimately recovered. The third case proved fatal, and the phosphorus was of no avail.

"On opening the stomach, a very strong garlic or phosphoric odour was perceptible; and the solid phosphorus was lying over the surface in small bits, apparently in part dissolved, or rolled down by the action of the stomach. One piece had assumed a lenticular shape, and was soft like moistened glue. The others retained their hardness, and when removed from the stomach, and slightly dried with a cloth, and rubbed between two folds of papers, they instantly ignited, and burnt the paper with a brilliant flame, showing that the active properties of the drug remained unimpaired. The stomach contained a small quantity of thin black-coloured liquid, similar to that generally found in cholera; and when poured into a vessel, it smelt strongly of the peculiar odour of phosphorus." (p. 70.)

From these appearances, Dr Adam thinks the medicine had been acted upon by the gastric powers, but it appears to us, that it had only undergone some degree of chemical fusion and solution, and perhaps even slight combustion, until the whole oxygen of the air in the stomach was converted into phosphorous acid. As a remedy, he concludes that its exhibition is admissible only in the second stage, we would say, in none.

Dr Wallich gives an accurate botanical description of the tree which produces the Nipal camphor wood, *Laurus glandulifera*, which seems to form the connecting link between *L. camphorifera*, *sassafras* and *parthenoxylon*. Mr Playfair has given a pretty full account of the Madár, and its medical uses. This is the powder of the root of the *Asclepias gigantea* of Lamarck, the *A. procera* of Willd. a species very similar to the Madorius of Rumphius, the *A. gigantea* of Willd.

"The Madár is prepared as follows:—The roots are dug from a sandy soil in the months of April and May. They are well washed in clear water, till every particle of soil is removed; the moisture then carefully absorbed, by wiping with a cloth. Placed in the open air, they are allowed to dry so far, that the milky juice shall in some degree become inspissated, so as not to flow during the subsequent operation. The outside brown crust is then to be scraped off, and the rind left pure and white. The rind is now to be sliced off, or separated from the woody part, and dried for use. When reduced to a powder, it must be preserved in bottles, well corked, as it is apt to attract moisture." (pp. 83, 84.)

No account is given of the sensible or chemical properties of this substance. The latter have probably not yet been examined, but the omission of the former is a defect. The dose of Madár is five grains twice a-day, or three grains three times a-day, but it has been increased, without any bad effects, to 30 *grains in the day*.

"The diseases in which the Madár has been found beneficial are various. It acts as a powerful tonic and alterative, as a stimulant and deobstruent, and, combined with opium, as a sudorific.

"It has been given with great advantage in syphilis; lepra; in cutaneous eruptions, and dropsy; in rheumatism, hectic fever, and tabes from glandular obstructions; in tape worm, and in intermittents. It stimulates the extreme vessels on the surface, and diminishes the velocity of the general circulation. It has been found very efficacious in that species of cancer, so common among the natives of India, called *Lupus*, and in all the varieties of leprosy, or elephantiasis. In the horse, it appears effectually to cure the *Bursattee*, a disease common and destructive in this country; but I am possessed of too little veterinary knowledge to say whether it is a species of Farcy, or a disease peculiar to this climate." (pp. 84, 85.)

Its sensible effects are not very obvious. We however observe, that it has at last produced nausea, with considerable heat at stomach, and that it had even been rejected. One patient observed it to have a diuretic effect, but to diminish the alvine discharge; but in another case it seemed to move the bowels. It did not appear to cause an increase of perspiration, nor sensibly to augment the heat of the surface, nor have its effects on the pulse been sufficiently ascertained; but it seemed where there were ulcers, with passive inflammation, to impart a degree of activity to the small vessels, which led to a decided improvement of the sores. We have been indebted to Dr Adam for a considerable supply of Madár, and shall be happy to furnish a portion to any person desirous of making trial of it in public or private practice, or to collectors of Materia Medica, and, with this view, have sent a quantity to Messrs Duncan and Ogilvie, druggists, Edinburgh, to whom application may be made.

Mr Skipton has employed with success in spasmodic asthma, a decoction of the root of the *Datura fastuosa*. An ounce of the small, and bark of the large roots, was boiled in a pint and a half of water to one pint, and given in a dose of two ounces repeated. One patient took the whole pint at once. But she became comatose; pulse 85, slightly intermitting; pupils a little dilated, but contracting on the application of light. From this state she gradually recovered.

Dr Adam suggests a saturated tincture of datura, prepared from the capsules, seeds, and leaves, mixed in equal parts, and with the proportion of proof spirit used by the London College in the preparation of tincture of digitalis, as a preferable form of the medicine for India.

"The tincture is of a dark green colour, and resembles in that respect, as well as in flavour, the saturated tincture of digitalis. I have only yet employed it in two cases, one of asthma in a native;

the other organic disease, most probably aneurism of the aorta, in a European." (p. 371.)

Mr Skipton cured a severe case of hysteria, by the use of a decoction of one ounce of the leaves of the *Melia Azedirachta* in a pint and a half of water. A wine glassful given as a dose was not retained until it was combined with some compound spirit of lavender.

An accident led Mr Baker to inquire into the use of the *Nux vomica* by the natives. A man fell down suddenly in a tetanic fit, from which he recovered, after getting some ammonia, and soon afterwards vomited. He had been taking nux vomica for some months. He had begun with the eighth of a nut, and gradually increased it to a whole nut, above 20 grains, morning and evening, a dose which must not be exceeded. He ascribed the fit to his having taken it on an empty stomach, and not having eaten any thing afterwards. It is directed to be taken immediately before or after meals, otherwise it is apt to produce a degree of intoxication like that produced by taking the Cannabis sativa, and it is apt to disagree with the stomach, if taken with milk; but if taken as directed, it has no perceptible effect on the stomach or bowels. It is used by the natives in leprosy and its precursory symptoms, as a preventive of hydrophobia, and in anasarcous swellings of the lower extremities, common after fevers. It is taken either in its natural state, coarsely powdered, or half roasted on a hot iron, changing it from side to side, till it swells out, which it does in one or two minutes. It is well known to be intensely bitter, and is said to be used by the porter brewers. The following information is from the Flora Indica of Dr Roxburgh, a work from which we expect a great addition to our knowledge of the Materia Medica of Hindostan, but which we have not yet met with, nor do we know where it is to be obtained.

"The wood of this tree (Strychnos nux vomica) being hard and durable, is used for many purposes by the natives. It is exceedingly bitter, particularly that of the root, which is used to cure intermittent fevers, and the bites of venomous snakes, when that of *Naga Musadi* (S. Colubrina) cannot be had. The seeds are employed in the distillation of country spirits, to render them more intoxicating. The pulp of the fruit seems perfectly innocent, as it is greedily eaten by many sorts of birds."—*Flor. Ind.* vol. ii. p. 263. (p. 143.)

There are two papers on the Croton Nut and Oil, one chiefly historical, by Mr H. H. Wilson, and the other practical, by Dr Adam. Mr Wilson traces back the knowledge of it to the Arabians, and among Europeans to the Spaniards and Portuguese; Garcia Ab Orto and Christofer D'Acosta having both noticed it; and it is well known that it was very accurately and fully described by the Dutchman Rumphius, under the name of *Granum Molluccanum*. Prior to the successful exertions of Mr Conwell to introduce this oil into general practice in Europe, the best modern account is in Dr Ainslie's Materia Medica of Hindostan. Since that time the essays on it in all languages are numerous. Croton oil is frequently adulterated, and Dr Nimmo of Glasgow, finding that about forty-five parts were soluble, and fifty-five insoluble in alcohol, proposed its comparative solubility as a test of its genuineness. But these experiments require repetition and extension. Besides, the test is too delicate except for skilful chemists, and it is easy to make a mixture of castor oil with olive oil in such proportions as to possess the same degree of solubility. Dr Paris's proposal to distinguish the portion soluble in alcohol and ether, which is the drastic principle of the oil, by the name Tiglin, is altogether premature. Other fixed oils possess properties equally characteristic, and it would be highly inconvenient to give each of them specific names. The partial solubility of the oil in alcohol, furnishes us with an easy method of diluting it, which, however, could be equally well done, and is in fact frequently done, by dissolving it in another fixed oil. Dr Paris recommends two drops of the oil to be digested in a fluid drachm of rectified spirit and then filtered; but as a portion of the spirit is lost by evaporation, he considers half a fluid drachm as being equivalent to a drop and a half of oil. A better method would be to add as much spirit after digestion as to make up the original volume of a fluid drachm, when each half drachm would always contain the soluble part of a drop of oil. As we observe that there is still some uncertainty among the best French pharmacologists in regard to this valuable seed, we had marked, as quotations, which, however for want of room we are obliged to omit, a few selections from a compilation by Mohammed Hosein, now in the press, which has greatly raised in our estimation the Hindoo writers on Materia Medica. The various ways of preparing it furnish a characteristic specimen of Hindoo pharmacy.

Dr Adam has related his clinical trials with the oil, which agree perfectly with those made by ourselves. The first we used was brought by our friend Dr Buchan to the fever hospital, and a single drop was dropt on each of twenty lumps of sugar. About seventeen of these doses were given to as many fever patients whose cases seemed to require the exhibition of a drastic purgative. It produced in all free purging, with more or less griping and vomiting in about a half; but the chief complaint in those who were in a state to observe and describe their sensations, was a disagreeable sense of pricking and painful heat with dryness and constriction of the fauces, lasting the whole day. We have never since met with any equally acrid or drastic, which leads us to believe that it is now sold diluted with castor oil. A tincture of the seed has been brought into notice by Mr Smith, which is quite pellucid, and when added to any liquid scarcely alters its colour or flavour; but it is objectionable as irritating the fauces more than the seed in substance. To obviate this from its exhibition in the form of pills, they may be gilded, as Dr Adam suggests, or swallowed in a grape or raisin, according to the Hindoo method.

The effects of the root of the bark of the pomegranate against the tape-worm has been known for some time, but Mr Breton has found that the dried bark of the stem is equally efficacious both in decoction and in powder. The *modus agendi* of this drug has not been ascertained. Does it contain prussic acid, like the bark of some other congenerous plants, or is it merely an astringent? Upon the latter supposition, other equally powerful astringents might be substituted, and they may be supposed to act upon the albuminous nidus, or even the skin of the worm.

Dr Maxwell gives an account of an oil extracted from a fragrant grass, ascertained by Dr Wallich to be the *Andropogon Ivarancura.* It is highly pungent, and when applied by friction, seldom fails to remove or greatly alleviate rheumatic affection.

We are still ignorant of the plant which furnishes the Gum Ammoniac; for the colleges, which have referred it to the Heracleum gummiferum as its source, are certainly mistaken, for the reasons stated by Dr Duncan junior in his Dispensatory. Any information on the subject is therefore acceptable to the pharmacologist, and accordingly the plate and account inserted on the authority of Captain Hart are valuable, although imperfect. We may mention that the drawing does not accord with that given by Mr Jackson of the plant which yields the gum ammoniac in Morocco, and we transcribe the whole of the information.

"It having been intimated to me while at Bushire by the resident, Capt. Bruce, that the plant which produces the gum ammoniac, called by the Persians oshac, would be acceptable to botanists, as it was but imperfectly known, I procured the accompanying piece of stem, leaf, and flower, and took a drawing of one of the finest plants. Its height was seven feet two inches, and the circumference of the lower part of the stem four inches. It grows principally on the plains between Yerdekaust and Kumisha, in the province of Irauk, without cultivation. The gum is so abundant, that upon the slightest puncture being made, it instantly oozes forth, even at the ends of the leaves. When the plant has attained perfection, innumerable beetles, armed with an anterior and posterior probe of half an inch in length, pierce it in all directions: it soon becomes dry, and is then picked off and sent *via* Bushire, to India and various parts of the world, and is an article of considerable export. I am of opinion it might be cultivated in many parts of Kattywar, and the experiment might be worth the consideration of Government. The gum might easily be procured by artificial means, which would answer the purpose equally well.

" From the part of the stem attached to the roots of the specimen I sent you, a considerable portion of the gum will be seen exuded, in which respect it resembles the assafœtida plant, which abounds in the mountains in the south of Persia, particularly in the province of Lar." (p. 370.)

A short notice is given by Dr Jackson respecting the employment of the leaves of the Diosma crenata (Boocho leaves,) by the natives at the Cape of Good Hope. It is now used in the form of infusion of half an ounce to a pound of water, in gravel, morbid irritations of the bladder and urethra, cystirrhea, disease of the prostate, spasmodic stricture, and chronic rheumatism, internally in infusion, and externally in the form of tincture.

We have, we trust, sufficiently justified our general praises of this volume; and we are happy to learn that the second is already in the press, and that it will contain, with other interesting papers, an account of the singular epidemic which visited Calcutta last year, and an essay on the native mode of couching, which will not fail to interest and *astonish* the most skilful Europeans.

ART. VI.—*Traité de l'Auscultation Medicale et des Maladies des Poumons et du Cœur.* Par R. T. H. LAENNEC, Medecin de S. A. R. Madame Duchesse DE BERRY, Lecteur et Professeur Royal de Medecine au College de France, Professeur de Clinique à la Faculté de Medecine de Paris, &c. &c. &c. Seconde Edition, entierement refondue. Deux Tomes. Paris, T. S. Chaude Libraire-Editeur, Rue de La Harpe, No. 56. 1826.—*Treatise on Mediate Auscultation, and on Diseases of the Lungs and Heart.* By R. T. H. LAENNEC, Physician to her Royal Highness the Duchess of Berri, &c. &c. Second edition, entirely new modelled, &c.

WHEN we consider the rapid progress which medicine has made since the commencement of the present century, and the great diffusion of sound medical knowledge, scarcely a single individual can be mentioned, whose personal researches have contributed so much to these effects as the acute and indefatigable author of the present work. His merit consists at once in rendering our knowledge of the morbid changes of the lungs and heart infinitely more accurate than it was in the hands of his most learned predecessors, and in presenting the profession with a method of distinguishing the several diseases of these organs with a degree of precision which had been often wished for, but never attained. It is not easy to say which of the two services is greatest to practical medicine. On the value of the pathological labours of M. Laennec, the whole profession we believe are perfectly unanimous. If any doubt is still entertained regarding the merit of the mechanical contrivance which he employs as a diagnostic means, it is more to be ascribed to the indolence and indifference which will not undergo the labour of investigation, than to any satisfactory objections with which it has been opposed. By ignorance and incapacity it may be abused and misapplied; and the formality of its employment in cases too manifest to require its aid, may expose it to the sneer of the sarcastic, or the ridicule of the witty. But it is the character of true science to examine deliberately ere it decide; and the actual merit of every contrivance or invention is best ascertained by time and experience.

Since M. Laennec first promulgated his method of examining the state of the thoracic organs in 1819, the stethoscope has been employed by various physicians in different cities and countries of Europe; and though most of these have learned the method of using it and marking its signs from the descriptions of the author only, yet they have, with few exceptions indeed, admitted, in its fullest extent, the value of the instrument, and have confirmed, in the most ample manner, the accuracy of the conclusions of M. Laennec.

It is almost unnecessary to say that these confirmations have resulted chiefly from the researches of Dr Forbes in this country, Dr Clarke at Rome, MM. Bertin and Bouillaud, Lerminier and Andral, and Louis in Paris, and other eminent practitioners in various cities of Europe.

Nor has its use been confined within the original limits suggested by the author. It has been successfully applied by M. Lisfranc to the diagnosis of several surgical diseases, especially that of stone in the bladder and cases of doubtful fractures, and by M. Kergaradec to ascertain the fact of pregnancy and the life of the fœtus. It is not easy to conceive, in so short a space of time, so many strong confirmations; and it may be regarded as an earnest of the general use of the method in the course of half a score of years, and of much greater precision in the diagnosis, not only of diseases of the lungs, but more especially in that of diseases of the heart.

While other physicians have been diligent in pursuing the career of investigation first traced by Laennec, and have been ascertaining the value of the stethoscope as a mean of distinguishing the diseased states of the thoracic organs, the author himself has not remitted his exertions. During seven years of more or less assiduous observation he has been incessantly occupied in collecting new proofs of the justice of his principles, and of the general accuracy and precision of his method of examination. He has prosecuted and extended his pathological inquiries, and compared them with those of the physicians of other nations. Conclusions at which he had arrived by the long and circuitous but sure method of analytic induction, he has now confirmed by so many additional proofs and arguments, that he has been enabled to give them the synthetic form. Several subjects on which the infant state of pathological knowledge prevented the possibility of giving positive results, or any results whatever, are now illustrated or determined by the facts which more accurate and extensive research has brought to light. Lastly, by connecting with his pathological and semeiotic descriptions, those therapeutic principles on which experience has fixed the highest value, M. Laennec has omitted nothing which could be done to render his work complete as a pathological and practical treatise on the diseases of the organs of respiration and circulation.

These additions have so much enlarged the treatise on Mediate Auscultation, and, at the same time, so completely changed its arrangement, that it should be considered rather in the light of a new work, than a mere new edition of the former. It contains, to be sure, all the matter of the first publication of M. Laennec; and the pathological and semeiotic information is remarkable for the same accuracy and amplitude which distinguished that treatise. But though the work now appears in a character so changed, we do not propose to treat it entirely as a stranger. When the first edition appeared, we gave a full account of the employment of the stethoscope in examining the organs of respiration, and an analysis of that part which treats of diseases of the lungs. As an appendix to that article, we shall give a short account of the arrangement of the matter in the present edition, and of the additional articles introduced. We shall then proceed to the examination of the third part of the work, which treats of diseases of the heart,—a subject on which we did not then enter, and which is so much more deserving attentive consideration, as the author has improved his observations, by comparison with those of Mr Allan Burns on the diseases of the Heart, Mr Hodgson on those of the Arteries, and by the study of the great German work of *Kreysig* on the diseases of the Heart and great vessels. We speak first of the order in which M. Laennec treats of the diseases of the lungs in the present edition, and of the new matter which he has found it necessary to introduce.

After a very detailed and elaborate account of the mode of using the stethoscope, of the stethoscopic signs, and of the new applications of which it is susceptible, M. Laennec proceeds, in the second part of his work, to consider the various diseases, either of structure or function, incident to the organs of respiration. The matter of this part is arranged in four great divisions or sections. In the first the author treats at great length of the diseases of the *bronchi* and their mucous membrane. The second is devoted to the consideration of diseases of the pulmonic tissue. In the third, we find a full and elaborate essay on new or accidental productions developed in the lung, concluding with two chapters on the diseases of its vessels, nerves, and nervous system. And of the fourth and last the subject is a copious and accurate account of diseases of the pleura. It will be at once perceived that this arrangement is much more natural and philosophical than that which was employed in the first edition; and that it is also much better calculated for exhibiting a distinct and complete history of the morbid states of the pulmonary system, and communicating an instructive account of its various disorders. The subordinate details of the sketch are given in the following manner.

The diseases of the *bronchi* are discussed in nine chapters, according to the texture affected, and according to the peculiar character of the morbid action in each disease.

The first chapter, on the several inflammations of the bronchial mucous membrane, is the longest, the fullest, and perhaps the most elaborate. It consists of eight separate articles, in each of which the author considers attentively the following forms of bronchial inflammation—Acute mucous catarrh, chronic mucous catarrh, pituitous catarrh, dry catarrh, convulsive catarrh or chincough, symptomatic catarrhs, latent catarrhs, and lastly, suffocating catarrhs.

The article on *Pituitous catarrh*, or what M. Laennec terms *phlegmorrhagia*, is much larger and fuller than it formerly was. It is rather, however, the effect of other disorders of the mucous membrane than one itself. It occurs after repeated attacks of catarrhal inflammation, acute or chronic, at the period of resolution in peripneumony, and it accompanies œdema of the lungs. It, in short, ought to be regarded as a derangement in the mucous secretion, the effect of previous inflammation, or other disorder, and one of the means which nature employs to expedite the cure. In this view it approaches more to the character of a mere *profluvium*, than any other catarrhal affection with which we are acquainted.

The article on *Dry catarrh* is also much enlarged. It appears that not a few instances of asthma, nervous-cough, gastric-cough, hepatic-cough, and other anomalous derangements of the respiratory function, belong to this complaint. It consists in swelling, with dull redness, or violet tinge, of the mucous membrane of more or fewer of the bronchial tubes. It is not, however, without mucous secretion and expectoration, as might be expected from the name applied. But as the secreted mucus is greatly more viscid than in other catarrhal affections, it is therefore less easily and less abundantly discharged. There is further something peculiar in this state of the bronchial membrane, in so much as it manifests little tendency to much mucous secretion, and as the membrane is unusually dry, even where it is red and swollen. When it continues long, it has a tendency to spread, and then it invariably terminates in the formation of emphysema of the lung, or dilatation of the pulmonic vesicles. It is in such cases that breathlessness, (*dyspnœa*,) becomes habitual. The observations on the treatment, which are entirely new, will be studied with advantage.

The principal novelty in this chapter, however, is the article on *Hooping-Cough*. The pathology of this disease has never been well understood, or very distinctly demonstrated. Cullen, though he considered it as essentially spasmodic and convulsive, admitted that it was attended with fever, and a state of the lungs plethoric at least, if not inflammatory.* We have often been induced to think that the spasmodic or convulsive respiration, or hoop, which distinguishes the disease, is not so much a peculiar constituent part of it, as the effect of the morbid irritation of the unsound bronchial membrane. The ideas which Laennec forms of it are, in our judgment, the most natural that have yet been entertained. He represents it as a variety of pulmonary catarrh, holding an intermediate place between the pituitous (*phlegmorrhagia*) and the ordinary mucous catarrh, but presenting in its course and symptoms peculiar and distinct characters.

When the chest of a child attacked by chincough is examined by the aid of the stethoscope, we find during the interval of the hooping-fits, only the ordinary signs of catarrh;—that is, the respiratory murmur feebler, or even extinct in some points which sound well otherwise, puerile respiration in other points, and sometimes a slight mucous rattle, with a snorting or hissing noise. During the hooping-fits, on the contrary, we feel only the quivering or tremulous motion communicated to the trunk by the shocks of the cough; and a little *rhonchus*, or respiratory murmur only, becomes audible during the short intervals which take place between the expulsive shocks of the cough; but the prolonged hissing inspiration, which constitutes the pathognomonic character of hooping-cough, seems to take place altogether in the larynx and windpipe. Neither the murmur of pulmonary respiration, nor the peculiar bronchial murmur, is heard even in those parts of the lung, which some instants before and after the hoop gave rise to the puerile respiration.

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* It has in common with the catarrhal contagion, and with that of measles, a peculiar determination to the lungs." 1402.

There are only two modes in which M. Laennec thinks this phenomenon can be explained. It results either from a temporary bloody or serous congestion, which produces sufficient swelling of the mucous membrane of the bronchial tubes to obstruct them, or from spasmodic constriction of the bronchial tubes, which he thinks would produce the same effect. To demonstrate the possibility of the latter supposition, M. Laennec has recourse to the authority of Reisseissen, who, in his dissertation on the Structure of the Lungs, believes he has succeeded in proving the existence of muscular fibres not only between the cartilaginous pieces of the bronchial tubes, but in those destitute of cartilage, where they form a separate muscular layer.* He acknowledges, indeed, that he has not been so successful as M. Reisseissen in detecting this arrangement of muscular fibres; but as they are visible in breath-tubes of middle size, and as various morbid phenomena, especially those of asthma, indicate a contractile power in the lungs, independent of the thoracic muscles, he hesitates not to admit their existence.

We doubt much whether we can presume to criticise, with any severity, the opinions of this practised observer and able pathologist. But, with deference to his extensive experience and mature judgment, we conceive that the hoop, or convulsive inspiration of chincough, may be explained without having recourse to the bronchial muscular fibres at all. We do not feel competent to speak with decision on the question of their existence or non-existence; for, although we have repeatedly examined the bronchial tubes, without being able to satisfy our doubts on this head, yet we are convinced that mere anatomical inspection is not sufficient to decide the point. But, supposing their existence were established to demonstration, it is quite unnecessary to suppose them affected with spasmodic constriction in order to account for the hoop. If they were constricted in this manner, the constriction would last much longer than it does, and it would not be confined to the mere motion of inspiration. In spasmodic asthma, in which constriction of this kind is supposed to take place, it lasts for a considerable time; and the wheezing, or crowing in inspiration, is the effect of the constriction of the lungs.

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* See an account of this work, vol. xxi. p. 450.

When the fit of hooping-cough is carefully observed, two facts may be discovered. First, It is found that the motions, to which the denomination of *convulsive* is applied, take place exclusively in the larynx and windpipe; but it may be also shown that these motions are rendered necessary by a peculiar state of the lungs. The glottis and its muscles seem to be the chief seat of these motions. It is the air passing through the glottis which makes the peculiar hooping noise; it is the spasmodic action of the muscles of the glottis which gives rise to the crowing and gasping action by which the air is drawn into the lungs; and it is from the anatomical fact of the *rima glottidis* being much smaller, and the glottis less susceptible of enlargement in young children than in adults, that this disease assumes such severity at this early age.

This convulsive motion, however, though a most important part of the disease, is not all. It is the mere effect of a previous state of the lungs, occasioned by the action of coughing. In hooping-cough, the air is expelled not only with violence, but so repeatedly and irresistibly, that the lungs are almost completely emptied of this necessary fluid. The effect of this is, that their condition approaches much more nearly to that which takes place in *asphyxia* from any of the suffocating or non-respirable gases, than in any other disease to which they are liable. This gives rise to the involuntary and forcible or hooping inspiration, which is nothing more than a natural effort to fill up, by a fresh supply of air, the vacuum made in the lungs by the repeated strong expirations of the cough. So complete, however, is this vacuum, that the air cannot be sent through the glottis in sufficient quantity, and with sufficient rapidity; and hence the gasping for breath, the crowing, and the sonorous or hooping inspiration. It is the existence of this vacuum, or approach to *asphyxia*, which explains the fact remarked by our author, in examining by the stethoscope the chests of children during the hooping-fit. "Neither," he states, "is the murmur of the pulmonary respiration, nor is the bronchial murmur audible even in parts of the lungs, which, a few seconds before, and after the fit, gave the puerile respiration." The truth is, that respiration is suspended during the hoop, and, therefore, no respiratory murmur can be perceived.

This state of *asphyxia* is occasioned by the cough, which is not in the least degree more a convulsive cough than any other cough, for example, than the cough in ordinary catarrh, in peripneumony, or in consumption. We are therefore brought to the question, what causes the cough? and we presume this is to be answered in the same manner as similar questions are. Every cough is occasioned by irritation of some part of the lungs;

and, in this instance, the existence of irritation of the bronchial and pulmonary mucous membrane is so manifest, that it must be unnecessary to waste words or time in formal demonstration.

The sixth, seventh, and eighth articles on symptomatic, latent, and suffocating catarrhs, are also new; but we must be satisfied with a general reference to their perusal. The suffocating catarrh is evidently that of authors, (*catarrhus suffocativus*, of Rolfink, Hoppe, Wedel, Brendel, and Nicolai,) the bastard peripneumony, (*peripneumonia notha*) of Sydenham and Boerhaave, and the *catarrhus senilis* of several authors. It is by no means clear to us that it is placed in its just situation by M. Laennec; for in its pathological characters it is much the same as severe catarrh or bronchial inflammation, and our author does not attempt to show that it is ever different. The absence of cough, (M. Laennec should have said the *inability to cough*,) leads him to think, that in this affection there is palsy of some of the powers, which, in the natural state, are concerned in the excretion of the pulmonary mucus. This mode of expression is not uncommon at present in some of the writers of the German school. It is convenient in disguising ignorance and expressing nothing; nor did we expect to find it in the most rational pathological writer of France. We know no facts which could lead us to believe in the idea of palsy of the organs concerned in the secretory function; and as the phenomena of the bastard peripneumony are sufficiently explained by the congestion of the mucous and submucous pulmonic membrane, we see no necessity for adopting the supposition. On this subject we could have wished that M. Laennec had consulted the treatises of Badham and Hastings, which would probably have prevented him from separating the disease from ordinary bronchial inflammation, and from subdividing it into four different varieties.

The second chapter, on *Dilatation of the bronchia*, is very much enlarged; and the nature of the disease is illustrated with one or two additional cases. This change in the structure and shape of the bronchial tubes is so closely connected with that of emphysema of the lungs, or enlargement of the pulmonic vesicles, that the arrangement of the first edition, in which they were placed near each other, was perhaps more natural than that of the present, in which the latter disease is placed in the subsequent section.

The third chapter, on *Plastic Inflammation of the mucous membrane of the breath-passages, or Croup*, is entirely new. The ideas of M. Laennec on the pathology of the disease are, on the whole, accurate; but they present little novelty to the English reader, who has been instructed by the valuable researches of Home, and especially of Cheyne. He is perfectly correct in refusing to ascribe the plasticity of the exuded matter to the intensity of the inflammation. The mucous membrane covered by this exudation in croup is often less red, and less swollen, than in many forms of catarrhal inflammation. In other respects, a distinct analogy may be traced between croupy inflammation, and that which gives rise to the formation of bronchial polypus, to false membrane in the intestines, to false membrane in the urinary bladder, and to the false membrane secreted by the womb in some females, who continue sterile so long as they secrete it. In all these cases the diseased membrane assumes an action similar to that which takes place in inflamed serous membranes, and secretes a morbid fluid with a large proportion of albuminous matter, in consequence of the presence of which it undergoes a speedy coagulation. In croup, Cheyne proved that the secreted matter was fluid in the lower divisions of the bronchial tubes and in the lungs, but became coagulated as it was propelled upwards into the larger branches and windpipe. This, we conceive, is sufficient to show that the secretion is not purulent matter, as M. Laennec supposes; and, therefore, that it is unnecessary to ascribe its *concretion* to a peculiar disposition of the fluids.

The fourth chapter, on *bronchial hemorrhage*, is partly new, partly expanded from the observations on hemoptysis and pulmonary apoplexy in the former edition.

In the fifth chapter on *polypi of the bronchial mucous membrane*, M. Laennec confounds polypous excrescences, or fleshy productions from the membrane, with a very different affection,—the albuminous and tubular concretion which is occasionally formed in mucous surfaces. A few observations on the characters and formation of the latter might have been introduced at the close of the chapter on croup, to which the polypous concretion is nearly allied. Every thing hitherto known regarding these substances shows, that they are false membranes, consisting chiefly of albuminous matter, and formed by secretion from the mucous membrane in a state of inflammation. Good representations of it are given in the second plate of Dr Baillie's second Fasiculus, which appear to be unknown to our author. As to the genuine *polypous excrescence* of vesicular structure, occurring in the tracheal or bronchial membrane, it is an exceedingly rare disease; and M. Laennec admits, that he knows of no more than three examples in the writings of authors.

In the sixth chapter, on *ulcers of the bronchi*, M. Laennec gives a short and rather imperfect account of tracheal consumption. Since the time of Morgagni, M. Cayol is the only author almost who has bestowed any attention on this disease;*

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* Recherches sur la Phthisie Tracheale, Paris 1810.

and since his time M. Andral has noticed it at some length in the third volume of his *Clinique Medicale*,* yet it is by no means rare or unknown; and many insulated cases are recorded in various works, which, if collected, would tend to throw some light on its nature.

In the seventh chapter, the author mentions very shortly affections of the cartilaginous rings, and other constituent parts of the bronchial tubes; in the eighth, he speaks at some greater length on foreign bodies introduced into them; and in the ninth and last, he makes some judicious observations on affections of the bronchial glands. These are the black colour which they acquire in adult and advanced age; inflammation and its consequences; deposition of chalky matter; tubercular disorganization; and lastly, the existence of worms in them.

The second section, or diseases of the pulmonic tissue or substance, is introduced with a preliminary dissertation on the several opinions which have been given to the world regarding the minute structure of the lungs. This dissertation is partly new, partly formed from matter contained in the chapters on emphysema and œdema of the lungs in the old edition. It is unnecessary to repeat what M. Laennec thinks or says of the opinions of Malpighi, Helvetius, Haller, and Reisseissen, who have successively cultivated this department of organic anatomy. Nor will it avail much to say any thing of the opinion announced with more fancy than reality, by Picard, a young Parisian physician, in 1823. It is enough to say, that our author feels more disposed to rely on the descriptions of Reisseissen, both so far as anatomical inspection, and the observation of morbid changes allow him to go. Under all circumstances, no useful information can be derived from any speculations or researches which are not supported throughout by strict observation, and that species of proof which every one may derive from the right use of his senses. "If we depart from these rules," says M. Laennec; "if we seek the causes of severe diseases in microscopical alterations of the organs, it is impossible to avoid falling into absurd errors; and anatomy, both healthy and pathological, cultivated in this manner, would speedily lose the rank which they hold among the physical sciences, and be converted into a vast field of hypothetical propositions, founded on optical illusions and speculations, without any real advantage to medicine."

For these reasons, M. Laennec places little reliance on any other information on the intimate structure of the lung, than that which is obtained by simple inspection, in a good light, after the organ has been sufficiently inflated by air. Viewed in this manner through the transparent pleura, its *parenchyma*, that is the proper pulmonic substance, is found to consist of an aggregation of numerous minute vesicles, irregularly spheroidal or ovoidal, full of air, and separated by opaque white partitions. These vesicles, which present at the surface of the lung the aspect of small transparent points, do not appear to be absolutely of an equal size. The largest may be about the size of the third or the fourth of a grain of millet; and they are grouped in masses or lobules, which are separated by partitions, thicker and more opaque than those of the air-cells, though they are still very thin, and consist of strongly condensed cellular tissue. These partitions, which penetrate the lung in all directions, form, by their mutual intersections, at different angles, the lozenges, squares, trapeziums, or irregular triangles, with which the pleural surface of the lung is marked. It is along these lines that the dark pulmonic matter is deposited, which gives the lung its marbled appearance, and which becomes more distinct as life advances. M. Laennec very properly cautions against the errors too often committed, both by the aspect of these dark streaks, and by the bloody or serous *engorgement*, or infiltration, which is not unfrequently found in the lungs of persons who have died of very opposite diseases.

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* *Clinique* Medicale ou Choix d'Observations, &c.

The whole section consists of six chapters, appropriated to the discussion of the following subjects:—Hypertrophy of the Lung, Atrophy of the Lung, Pulmonary and Interlobular Emphysema, Œdema, Pulmonary Apoplexy, and Peripneumony. The two first chapters, on hypertrophy and atrophy of the lung, are short, but new.

By the term *Hypertrophy* of the lung, M. Laennec understands an increase in the size and energy of one lung in consequence of injury or destruction of the other. Thus Morgagni remarked, that, in cases of emphysema, with considerable compression of the lung towards the mediastinum, the lung of the sound side became evidently larger than it had previously been. This effect is much more frequent than has been supposed. Our author represents it as taking place uniformly in all cases in which one of the lungs is rendered useless for any considerable time, for example, a few months. It is recognised not only after purulent effusions, but also after pneuma-thorax, hydrothorax, emphysema of the lung, and especially after contraction of the chest succeeding severe pleurisy, or extensive pulmonary excavations.

In all these cases the sound lung acquires greater dimensions than in the natural state. Its tissue, at the same time, becomes *firmer*, more elastic, and more compact; and, instead of collapsing when the chest is opened, it sometimes projects a little when the sternum is raised, as if it had been confined within too narrow a space. Laennec thinks it impossible to doubt, that in some cases the air vesicles are enlarged, and that their walls acquire an unusual thickness; but he admits that this is not easily established.

Atrophy of the Lung.—This term is employed by our author to express that shrinking or diminished volume of the organ, which takes place in consequence of impaired nutrition of the organ, either from the pressure of serous or purulent fluids, or from the presence of numerous tubercles, or other new growths.

The third chapter on *Emphysema of the lung* is considerably enlarged. The principal novelty is the account of the mechanism of its formation. In dry catarrh, M. Laennec remarks, of which this disease is almost invariably the effect, the small bronchial tubes are often completely obstructed, either by the viscid *pearly* mucus, or by swelling of their mucous membrane Now, as the muscles of inspiration are strong and numerous, while expiration, on the contrary, is effected by the elasticity of the parts, and the feeble contraction of the intercostal muscles, it must often happen, that, in inspiration, the air, after forcing the resistance of the viscid mucus, or the swelling of the bronchial membrane, cannot overcome this resistance during expiration, and is enclosed by a mechanism analogous to that of the valve of an air-gun. The succeeding inspirations, especially the strongest and most complete, conveying a new quantity of air to the same situation, necessarily cause the dilatation of those air-cells to which the obstructed tube passes; and however transitory this accident may be, the distention becomes a fixed and permanent condition. In addition to the operation of this cause, the author lays some stress on the elastic power of the air, which, entering the air-cells cold, speedily acquires a temperature of 96° or 97° Fahrenheit, and which, he contends, cannot take place without, at the same time, producing considerable expansion of the air, and, consequently, distention of the air-cells. From all this it results, that dry catarrh must produce emphysema of the lung, or dilated cells, with as much facility and certainty as chronic mucous catarrh leads to dilatation of the bronchial tubes.

The name *emphysema of the lungs* is in our mind rather unfortunate; and the proof that it is so, appears in the present edition of the work of M. Laennec. Our readers must already be quite familiar with the organic lesion which this term is intended to denote, and must be aware that it bears no resemblance to that disease or injury to which practical authors have agreed to apply the name of *emphysema*. To the article now under consideration, M. Laennec has added a supplemental essay on *interlobular emphysema of the lung*. This is, indeed, a genuine emphysematous affection; for it consists in the presence of air in the pulmonic cellular tissue; and it is not only quite analogous to ordinary traumatic emphysema, but it almost invariably accompanies it, and is produced at the same time, in the same manner, and by the same causes which give rise to that external affection of the general cellular tissue. In short, air is never diffused through the general cellular membrane, without previously coming through that of the lungs; and this state, which M. Laennec has, by the unfortunate choice of an improper name, associated with a perfectly different disease, is nothing but the incipient form of traumatic emphysema. Pulmonary interlobular emphysema may take place without proceeding the length of external emphysema; but the converse of this never happens. Notwithstanding this awkward mistake, the description of the anatomical characters, of the causes, signs, and treatment of the disease is highly worthy of careful perusal.

The pathognomonic sign of the disease, according to M. Laennec, is the *dry crepitating rattle with large bells*, very distinct, or almost continual. There is also at the same time the sensation of one or more bodies ascending and descending with friction along the ribs during inspiration and expiration. The *ascending friction* takes place during inspiration, when the dry crepitating rattle is also audible and is liable to disguise it. The *descending friction* which accompanies expiration is heard much more distinctly and more frequently. These phenomena, discovered by mediate auscultation, are sometimes accompanied with a crepitating motion felt by the hand. This symptom, however, is sometimes wanting, and generally disappears before those obtained by the stethoscope.

The chapter on *Œdema of the lung* is much the same; but it is rendered shorter by the removal of the observations on pulmonary engorgement to the introductory dissertation, as already noticed. On the chapter on pulmonary apoplexy we have nothing to remark.

The sixth and last, on *Peripneumony* and its varieties, and on *Gangrene* and *gangrenous affections* of the lungs, is by far the most full and elaborate chapter in this section; and contains, in all probability, the most complete account of this disease extant. It is subdivided into six articles, in each of which the author discusses successively the following topics:—The anatomical characters of acute peripneumony, under the heads of obstruction, hepatisation, pulmonary suppuration, and abscess; the signs and symptoms of peripneumony; gangrene, and gangrenous affections of the lung; chronic peripneumony; latent and symptomatic peripneumony; and, lastly, the treatment and regimen to be employed for removing the disease.

Of a dissertation embracing so many important subjects, and treated with such minute detail, it is quite impossible in these pages to communicate any thing like an adequate account. The new information is undoubtedly copious and abundant; but it is so skilfully interwoven with the matter of the original article, that a complete abstract of the whole would be the only mode of doing it any justice. To attempt this is inconsistent with the plan and limits of this article; and we shall merely notice, as we go along, one or two principal topics, referring for more minute information to the work itself.

Abscess of the lung.—M. Laennec adheres to the notion announced in his first edition, of the extreme rarity of pulmonary abscess as a consequence of peripneumony. For this opinion he fell under the criticism of various authors, and among others, of Sir Alexander Crichton of London, and Dr Himly of Goettingen. If we remember aright, we noticed the shallow foundation on which the opinion of the former writer rests; and we are not inclined to place much greater reliance on that of the latter. No evidence short of that of dissection should be admitted, and by neither of these physicians has this been adduced. Elsewhere we have shown what may be advanced from this source in favour of or against the opinion of M. Laennec.* But this pathologist himself is undoubtedly best qualified to defend or to modify his own principles. He admits the occurrence of abscess to be more likely in partial than in general peripneumonies, and especially when the disease is epidemic. Thus, in the course of 1823, he met with more than twenty partial peripneumonies, all of which terminated in abscess of the lung. He acknowledges, however, that he came to this conclusion by stethoscopic examination, and that he had an opportunity of verifying his opinion by dissection in two cases only, all the rest having recovered. Yet he has not less certainty of the fact of abscess having taken place. All these patients presented distinct pectoriloquism, and a cavernous rattle in the place of excavation. In one only these phenomena were more distinct two inches below the excavation than upon the corresponding point of the chest; and the explanation of this was found on dissection. The point where pectoriloquism was most distinct, corresponded to a hepatised piece of lung, which terminated the lower floor of the abscess. The anterior boundary of the abscess, on the contrary, though nearer the chest, transmitted the voice of the patient less distinctly, because it was still crepitating, and only in the first degree of inflammation. Though some of these abscesses were extensive, cicatrization was effected perfectly, and without constitutional disorder, in a space of time varying from fifteen to forty days. In one patient who presented pectoriloquism and the cavernous rattle for a space of three square inches at the right inferior-posterior part of the chest, these phenomena disappeared completely at the end of three months ; and in a lady of 50, who had a much smaller abscess at the top of the left lung, they ceased only at the end of about six months ; but, long before this, both patients had recovered their flesh and strength, and believed themselves completely cured.

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* Medical and Surgical Journal, vol. xxi. p. 190, 191.

But what M. Laennec justly regards as the strongest proof of the rarity of pulmonary abscess, is the fact, that, notwithstanding the zeal with which pathological anatomy has been cultivated in France during the last twenty years, besides the facts already mentioned, only two well-authenticated cases of abscess of the lung have been of late years observed. In a preparation presented to the Royal Academy of Medicine by M. Honoré in 1823, in the centre of a hepatised lobe, there was a cavity full of purulent matter so large as to contain a middle-sized pippin. The patient died with symptoms of acute pneumonia. The second case, published by M. Andral, is that of a man who died on the nineteenth day of pneumonic inflammation. The middle and lower lobes of the right lung were in a state of purulent infiltration. " Near the middle of the lower lobe was a sort of pap, the centre of which contained genuine purulent matter, while the contiguous pulmonic tissue, at first broken down, gradually terminated in substance more consistent." M. Laennec has met with two or three instances of enormous excavations, occupying almost the whole lung, and which he thinks himself justified in ascribing to softened tubercles.

Effect of Tartarized Antimony in removing pneumonic inflammation.—To the practical reader, the most interesting part of this chapter will be found in an ample and patient inquiry into the effects of large doses of emetic tartar on pneumonic inflammation, compared with those of blood-letting and other remedial methods. Though the exhibition of this mineral salt in the peculiar manner believed to be essential to the cure of peripneumony, is known to have originated with Rasori of Genoa, and to have been continued by Tomassini and other Italian physicians, M. Laennec has had no means of knowing accurately the mode of administration and its peculiar results; and he therefore lays before the reader the method which he employs with singular success, though it differs, in several respects he believes, from that of Signor Rasori.

As soon as M. Laennec recognises the presence of peripneumony, however unable the patient appears to bear blood-letting, he directs from eight to sixteen ounces of blood to be drawn from the arm; and this rarely requires to be repeated except on subjects attacked with disease of the heart, or threatened with apoplexy, or some other bloody congestion. To this small evacuation he attributes the power of suspending temporarily the inflammatory orgasm, and of giving the tartar emetic time to operate.

Immediately after the blood-letting he administers the first dose of antimony, consisting of one grain in two ounces and a half of light orange leaf infusion, sweetened with half an ounce of syrup of mallow or orange-flowers. This dose is repeated every second hour till the patient has taken six doses, when he is allowed to rest for six or seven hours, unless the symptoms are very urgent.

But if the disease is already advanced,—if the oppression is great,—if the head is affected,—if both lungs are inflamed, or if one is entirely diseased, the tartar emetic is continued without interruption every second hour, until the symptoms abate, and amendment is denoted by the stethoscopic signs. Sometimes even when most of the bad and urgent symptoms indicated in the descriptive part of the essay occur in the same case, M. Laennec carries each dose of the antimony to the extent of a grain and a half, two grains, or even two grains and a half, but always in the same quantity of vehicle.

Many pneumonic patients bear the emetic tartar administered in this manner without vomiting, or being purged. The greater number, however, vomit twice or thrice, and have five or six alvine discharges the first day; but the following days the evacuations are moderate, or cease entirely. This condition of the system, which is supposed by Rasori to indicate that it *bears* the operation of the mineral, was termed by that physician *la tolerantia* in respect of the remedy. When it is once established, according to the experience of M. Laennec, the bowels may be so bound as to require the employment of purgative glysters.

When the evacuations continue the second day, or when there is reason to apprehend that, on the first, the system may not bear the antimony, M. Laennec combines with the six doses to be taken in the twenty-four hours, one or two ounces of syrup of diacodion (*syrupus papaveris albi*;)—a combination, which, though at variance with the theoretical opinions of SS. Rasori and Tomassini, experience demonstrates to be useful. Though the amelioration which emetic tartar effects is sometimes accompanied with general sweating, yet its influence is in no case more rapid and more effectual than when it causes no *sort of* evacuation. Though frequent vomiting, and copious alvine discharges are not desirable, M. Laennec has obtained remarkable cures under such circumstances.

It is rare to meet with pneumonic patients who cannot bear the antimony; and the state of *tolerance* may be almost always obtained by the judicious use of opiates. Thus, when a patient bears six grains on the first day, with syrup of diacodion, M. Laennec administers nine grains on the following day, when this quantity is borne with facility. After twenty-four or forty-eight hours at most, often even in the course of two or three hours, this method is followed by a notable mitigation of all the symptoms. Sometimes even a patient, who seemed destined to inevitable death, is at the end of a few hours out of all danger, without experiencing any *crisis*—any evacuation—any other remarkable change, in short, than progressive and rapid amelioration of the symptoms; and stethoscopic examination of the chest shows the reason of this sudden improvement by the appearance of all the signs of resolution. Effects equally striking may be obtained, according to our author, at all periods of the disease, and even when a great part of the lung is occupied with purulent infiltration.

Compared with the method of treatment by venesection, Laennec represents the operation of emetic tartar as more permanent in controlling the pulmonary inflammation, equally effectual, and less likely to cause a tedious period of convalescence. To demonstrate the general success of the remedy, he states the following facts. In 1824, he treated at the Clinical Institution of the Faculty twenty-eight cases of peripneumony, simple, or complicated with slight pleuritic effusion. Though most of them were very severe, all recovered except a cachectic septuagenarian, already in a state of senile fatuity, who took little of the remedy because he bore it badly. In the course of the present year 1825-1826, he treated thirty-four pneumonic cases, five of whom died. From this number, however, he deducts two women, one of fifty-nine, the other of sixty-nine, both of whom were brought to the hospital in the agonies of death, and both of whom soon expired, having taken only two or three doses of the antimonial potion. The third case was that of a young man, who, during convalescence from pneumonia, sunk under a disease of the heart. The fourth died of chronic pleurisy, supervening during the period of resolution of subacute pneumonia. The last, an old man of seventy-two, died on the tenth day of his pneumonic symptoms, with an affection of the brain. The inference which M. Laennec draws from this, is, that among fifty-seven pneumonic cases, only two persons of the age of seventy became victims to this disease, conjoined with cerebral congestion.

This gives a mortality of somewhat less than one in twenty-eight. The author's cousin, M. Ambroise Laennec, physician of the Hotel-Dieu of Nantes, treated in the course of two years forty cases of pleuro-pneumony. Of these six died, three in the period of convalescence, and, therefore, from errors of regimen. Deducting these three cases, the result is one death in thirteen cases.

The subject of the third section is *Accidental productions or growths developed in the substance of the lung.* These are of six different kinds: 1*st*, tubercles; 2*d*, proper cysts; 3*d*, cysts containing vesicular worms; 4*th* fibrous, cartilaginous, bony, ostea-petral, or cretaceous masses; 5*th*, *Melanosis*, or the black degeneration of the lungs; and, 6*th*, encephaloid cancer, or the *Fungus Haematodes* of the English pathologists.

These subjects are discussed successively in six chapters. That on pulmonary tubercles being the first, the longest, and the most detailed, comprising the pathology, symptoms and treatment of pulmonary consumption, forms the conclusion of the first volume. It is both much enlarged, and greatly improved; but we cannot pretend to enter into any account of its multifarious contents. The next five chapters, though also containing some new matter, we must leave to the perusal of the reader.

The conclusion of this section is formed by two additional chapters, the seventh and eighth, which should either have been considered in the former along with the diseases of the lungs, or should more properly have formed a separate section altogether. It is not easy to discover by what characters external or internal, visible or invisible, affections of the vessels and nerves can be said to belong to the class of accidental productions, or new growths. One thing is pretty manifest, that, if any order of diseases is less allied than another to the organic changes which form the subject of discussion in this section, it is those which nosological writers term *nervous* disorders. With all these objections, however, we are content to hear what a pathologist like M. Laennec can say on a subject so obscure. It is chiefly in the second and third articles of the eighth chapter, that the student will find information of any interest.

Like many practical authors, who overlook or forget the accurate definition of Cullen, M. Laennec uses the term *Asthma* as a general denomination for difficult breathing. We have neither leisure nor inclination at present to criticise this oversight; though we must be permitted to remark, that attention to the distinction of genuine spasmodic asthma from ordinary breathlessness, would prevent many errors, and save a world of trouble.

Neglecting this distinction, our author admits two sorts of "difficult breathing, sufficiently severe and permanent to merit the name of asthma," yet without evident alteration on the organs; and of these, the first he terms *asthma with puerile respiration;* while the second is the *spasmodic asthma* of practitioners.

In *Asthma with puerile respiration*, the respiratory murmur acquires the intensity which it had in infancy. By the aid of the stethoscope, the pulmonary expansion is heard to take place with the same uniform perfection, and with *puerile promptitude* in all the air-vesicles; and the patient is never the less oppressed, or feels the constant necessity of respiration still more ample. The lungs dilated in an extraordinary manner for the adult, are not sufficiently capacious to contain all the air which they require. This affection is sufficiently common in persons labouring under chronic mucous catarrhs, with easy and copious expectoration. The dyspnœa is often very intense; and it is sometimes augmented so seriously by slight exercise, that the patient, in other respects well, is condemned to a life of inactivity, or even a state of absolute rest. With these subjects, however, attacks of asthma are less frequent than with those labouring under dry catarrh. With the latter, the imperfection and the limited extent of respiration sufficiently explain the oppression. In the former, if the respiration is examined at the time when they suffer most, the perfection with which the function is performed, is astonishing. The respiratory murmur is quite puerile; and, as in a vigorous healthy child, the cells are dilated to their full extent in every point of the lungs. But the patient is stifled, and he would require more extensive respiration than that which his organization admits; in other words, the respiration is perfect, but the necessity of it is augmented. M. Laennec thinks the cause of this derangement is not to be sought either in the structure of the organ, or in the chemical phenomena of respiration; and he therefore concludes that it depends on some state of the nervous system.

On the subject of *Spasmodic Asthma*, two points are matters of great doubt. The first is the existence of the disease, or of so intense a difficulty of breathing coming on in fits, and with intervals of healthy breathing intervening. The second is, whether the disease, if its existence must be admitted, is in all instances unconnected with material cause or organic change? There is no doubt that, if the distinction above mentioned is not kept in view, and if the term *asthma* is applied indiscriminately to every case of difficult breathing, then in a multitude of instances it will be found, that it is a mere symptom of many diseases of the heart and almost every disease of the lungs. But if we define the disorder after the manner of Cullen, we have, in the first place, to prove the existence of spasmodic asthma, and in the second, to show that it is invariably independent of permanent organic change. These difficulties are well understood by M. Laennec; and we believe that he has done his best to remove them. For this purpose, he examines shortly the structure and functions of the bronchial tubes and the pulmonic vesicles, and glances at the morbid actions to which they are liable.

The discovery of muscular fibres in the bronchial tubes by Reisseissen is again of especial utility. M. Laennec has satisfied himself of the accuracy of this fact, in the case of bronchial tubes less than a line in diameter; and although it is difficult to trace these muscular fibres in smaller canals, he is willing to trust to analogy for the fact not only in them, but even in the pulmonic vesicles, or what are commonly termed air-cells.

Having established this anatomical fact, he has no difficulty in admitting the physiological principle with regard to contractile power, and incontinently the pathological inference with regard to spasmodic constriction. The lung, he contends, possesses an inherent power of expansion, independent of that which it undergoes by following the muscular enlargement of the chest,—p. 82. vol. ii.; and on the other hand, it possesses an inherent power of contraction and of occasional spasmodic constriction. Thus, great inspirations, in which the air fails to penetrate the vesicles, the long inspiration which precedes and follows coughing, the breathlessness occasioned by long reading or speaking, that is, without taking a full inspiration, and the panting which results from running, ascending a declivity, &c. are all inexplicable unless on the supposition of spasmodic constriction of the vesicles, or at least of the minute breath-tubes.

Are these conclusions established by the facts of morbid anatomy? An attack of spasmodic, of pure nervous asthma, is rarely fatal; and dissections are therefore rare to an extreme. M. Laennec, however, assures us that he has seen several examples of dissections of persons who laboured under the disease, yet in the lungs of whom he could detect no appreciable lesion to which the asthmatic symptoms could be ascribed. From all these facts and considerations, therefore, he infers that most of the attacks of asthma, though resulting from the combined operation of several causes, are chiefly to be ascribed to a primary and transitory alteration of the nervous influence.

Of the fourth section, on *Diseases of the Pleura*, we shall not speak at all, unless to say that it consists of five chapters, in which the author treats at great length on pleurisy and its varieties, dropsy of the pleura, effusion of blood into its cavity, pneumothorax or aeriform effusions, and, lastly, accidental productions or new growths in the membrane. The subject of the third chapter, *hemorrhagic effusion from the pleura,* need not have been separated from that of hemorrhagic pleurisy, of which it can only be regarded as a variety.

We now proceed to the consideration of the third great division of the work, in which M. Laennec treats of the diseases of the organs of circulation. It consists of two sections, the first of which is allotted to the subject of the exploration of these organs by means of the stethoscope; while the second exhibits an ample and detailed account of the diseases of the heart and its appendages.

We have already seen the great advantage derived from the employment of the instrument and method of M. Laennec in ascertaining the state of the lungs, and distinguishing the several derangements to which the function of respiration is liable. The stethoscope is not less useful in communicating information regarding the motions of the heart. It increases their force and distinctness so much, and transmits them to the ear so perfectly, that, by the proper use of the instrument, a good observer may become intimate with the several morbid modifications to which they are liable. The motions of the heart, examined in this manner, are considered by M. Laennec under four principal heads: 1*st*, the extent over which they may be heard; 2*d*, the shock, or impulsive force of the organ; 3*d*, the nature and intensity of the sound which it makes; and, *lastly*, the rythm, or harmonic succession in which its several component parts contract.

Extent of Cardiac Pulsation.—In the natural state, the heart, examined by the stethoscope between the cartilages of the fifth and sixth ribs and the end of the sternum, communicates to the ear the sensation of corresponding to a small spot of the walls of the chest, scarcely exceeding the area on which the instrument rests, sometimes covered entirely by the cylinder, and situated deep in the cavity of the mediastinum, yet communicating no motion or shock to the neighbouring parts. In other instances, again, it seems to fill entirely the mediastinum, and to extend beyond the spot to which the cylinder is applied; and its contractions, even when slow and noiseless, seem to heave up a considerable extent of the anterior walls of the chest, or to thrust its organs inward. This first sensation, in short, seems to indicate a heart more or less voluminous; and in general, this indication may be trusted, if the heart is examined in an interval of tranquillity produced by rest only. If this tranquillity is the result of blood-letting, inaction, low diet, or the debility of disease, the pulsations of the heart are less extensive than ordinary; and during agitation, or palpitation, they appear more extended than they are in reality.

The examination of the different points of the chest at which the pulsations of the heart became audible, furnishes practical conclusions still more numerous and important. In a healthy man, of moderate corpulence, and whose heart is well-proportioned, the pulsations are audible in the precordial region only, that is, in the space included between the cartilages of the fourth and seventh left sternal ribs, and the lower end of the sternum. The motions of the left cavities are felt chiefly in the first situation, and those of the right in the second. When the sternum is short, the pulsations may be felt in the epigastrium. In very corpulent persons, when the pulsations cannot be felt by the hand, the *pulsative area or sphere*, as it may be named, is sometimes strait-chested, and in children, on the other hand, the pulsative confined within the limits of an inch square. In the lean, the space is much more extensive. When, in such subjects, the cardiac pulsations are bounded in the manner now described, and are less distinct under the clavicles than at the precordial region, it may be inferred that the heart is in good proportions.

When the pulsative space becomes more extensive, the pulsations are heard successively in the following spots: 1*st*, the left side of the chest, from the arm-pit to the region corresponding to the stomach; 2*d*, the right side in the same tract; 3*d*, the left posterior part of the chest; and, *lastly*, but more rarely, the right posterior part. The intensity of the sound diminishes in the same succession, being less distinct under the right clavicle than under the left, still less in the left side, still less in the right side, and very indistinct in the back.

It is impossible, in marking this series of pulsative motions to confound the pulsations of the aorta and subclavian arteries with those of the heart. In all states, the heart gives two distinct beats for one of the arteries; and in thousands of persons examined by M. Laennec, he found only three or four in whom he could perceive the beats of the subclavian arteries; and these he ascribes to variety in the situation of these vessels.

When the extent of the pulsative area exceeds the limits already defined, the individual rarely enjoys perfect health. Attentive examination will generally trace the marks of the cachectic condition proper to certain diseases of the heart; his breathing, if not absolutely morbid, will at least be shorter than in most persons; he pants more easily; and he suffers palpitation from slighter causes. This state, however, which is that of persons popularly named *asthmatic*, may continue long without terminating in any serious disorder; and it may not even prevent the attainment of advanced age.

It may be stated as a constant fact, that the extent of the pulsations of the heart is in the direct ratio of the weakness and thinness of its walls, and consequently in the inverse ratio of their strength and thickness. It may be added, that the volume of the organ is favourable to extended pulsative area only when its increased volume depends not on increased thickness of the walls of the ventricles.

When the pulsations of the heart are audible in all the points already indicated, (p. 427,) it may be presumed that the heart is more bulky than natural, and that this enlargement depends on dilatation of one or both ventricles. This presumption will be rendered still stronger, if the pulsations are audible with equal or more force under the clavicles, or in the arm-pits, than at the precordial region. If the pulsations are audible neither in the back, nor on the right side, but at the other points only, and if they are perceived with nearly equal force under the clavicles, under the sternum, or the precordial region, and on the left side, it may be inferred that the ventricles are moderately dilated, and that the walls of the heart are thin naturally.

When, on the contrary, the pulsations are very strong in the precordial region, but inaudible or indistinct under the clavicles, and consequently in the rest of the chest, if the patient presents other general symptoms of disease of the heart, that disease, it may be inferred, is hypertrophy of the ventricles. If he has never suffered evident disorder of the functions of the circulating organs, it may be concluded that the walls of the left ventricle are distinctly thick and firm, though not to such an extent as to constitute disease. It may be stated, in short, as a general rule, that an *extensive or diffuse pulsative area* is one of the signs which indicate that the walls of the heart, especially those of the ventricles, are *thin* and *feeble*;—and conversely, that a *small or circumscribed pulsative area* is connected with *considerable thickness* of those parts.

The Shock or Impulse, communicated to the ear by the pulsations of the heart, is the sensation of heaving or percussion which these pulsations give the ear of the observer. This is often quite imperceptible to the hand, but may always be rendered distinct by the stethoscope. Its intensity is in the inverse ratio of the extent of the pulsative area, and in the direct ratio of the thickness of the ventricular walls. In a healthy adult, whose heart is in the proper proportion for the free exercise of circulation, this impulse is very indistinct, and often imperceptible, if the individual is corpulent. It is felt only at the moment of the *systole* of the ventricles, and is therefore ascribed to this contraction. The *systole* of the auricles is much deeper, much less distinct, if heard at all, and though audible by the stethoscope, is never or rarely felt by the hand. A forcible shock or impulse is to be regarded as the principal sign of hypertrophy of the heart; but the want of this symptom, amidst the general and particular signs, indicates dilatation of the organ.

The Murmur or Sound produced by the motion of the heart.—The stethoscope applied between the cartilages of the fifth and sixth sternal ribs, communicates to the ear a distinct twofold sound;—one clear and quick, like the clicking of the valve of a pair of bellows, corresponding to the contraction of the auricles; the other duller, more prolonged, coinciding with the arterial pulse, as well as with the cardiac shock.

The sound produced by the beat of the heart is so much stronger as the ventricles are thinner, and the impulse feeble; and M. Laennec infers, therefore, that it is not to be ascribed to percussion of the sides of the chest. In moderate hypertrophy, the contraction of the ventricles produces only a stifled sound, analogous to the murmur of inspiration; and the clicking of the auricle is greatly less rustling than natural. In extreme hypertrophy, the contraction of the ventricles produces merely an impulse without sound, and the sound of the auricle having become very dull, is scarcely heard.

When, on the contrary, the walls of the ventricle are thin, the sound produced by the contraction of the ventricles is clear and sufficiently sonorous, approaching to that of the auricles; and if there is marked dilatation, it becomes almost alike, and nearly as strong. Lastly, in cases of considerable dilatation, these two sounds are distinguished neither by their nature nor by their intensity, but only by the relation of isochronism or anachronism with the arterial pulse.

The contraction of the auricle, without becoming indistinct, may produce only a dull and noiseless hum, like that of the ventricles when it is impaired; and the cause of this may be either original disposition, or rather conformation, the anterior borders of the lung covering the heart more completely than usual,—or the supervention of disease, as in softening of the muscular substance of the heart, and over-distention of its cavities by blood during severe disease of the lung.

The Rhythm, or harmonic succession of motion in the cardiac contractions.—Since the year 1801 to the present hour, M. Laennec has anxiously availed himself of every opportunity afforded by dissection, of determining the natural proportions of the human heart; and he has come to the conclusion, that the volume of the organ, including the auricles, ought to be nearly equal to, little less or more than, the fist of the individual; that the walls of the left ventricle should be twice as thick as those of the right; and that the former, when cut open, should have sufficient firmness to prevent it from collapsing as the latter. In a heart of these proportions, the alternate contractions of the auricles and ventricles take place in the following rhythmic succession.

At the moment when the artery strikes the finger, the ear is slightly raised by a motion of the heart, simultaneous with that of the artery, and accompanied with a distinct, though a duller sound. Immediately after, without any interval, a clearer sound, like that of the dropping of a valve, the crack of a whip, or the lapping of a dog, announces the contraction of the auricles. A short, but distinct interval of quietude follows. After which, the ventricles are again raised with the dull sound and gradual progression previously remarked; the smart and flapping contraction of the auricles follows; and the heart again returns to its state of absolute rest. Though this interval of quietude was unknown or misunderstood by Haller, it is not less real and invariable. The relative periods of time in which these several events succeed each other, may be stated in the following order. Of the whole space occupied in the successive contractions, one-fourth, or at most one-third, is taken up in the contraction of the auricles; one-fourth is the space of absolute rest; and in the remaining half, or five-twelfths, the action of the ventricles is effected. It would follow from this, that the heart, instead of being in constant action, as is popularly supposed, enjoys an interval of rest alternate with its motion. Upon the supposition that this interval may form one-fourth of the whole time taken in each full and individual action, Laennec calculates, that, in twenty-four hours, the ventricles enjoy twelve hours of rest, and the auricles eighteen. In persons even whose pulse does not exceed fifty beats in the minute, the rest of the ventricles he states to be more than sixteen hours daily. The muscles of voluntary motion have not more than this in persons occupied in hard labour; and the muscles employed in preserving the erect position have perhaps still less.

In moderate hypertrophy of the ventricles, the rhythm is in some sense exaggerated. The contraction of the ventricles being less sonorous, is more easily distinguished from that of the auricles. The quietude, after the auricular contraction, is distinct, and forms an evident contrast with the sound which precedes, and the motion which follows it. Extreme hypertrophy furnishes an example of rhythm singularly altered. The ventricular contraction becomes very lengthened. It consists in a motion at first dull and deep, augmenting gradually, raising the auricle, and at last producing the sensation of the *shock*. The usual sound is wanting; or it is converted into a rustling *thrill*, like the respiratory murmur. The auricular contraction is very short, and almost without sound; it is scarcely audible, sometimes quite imperceptible; and the ventricular contraction scarcely ceases, when they begin to rise anew. The interval of quietude no longer exists, or it is confounded with the insensible commencement of the ventricular contraction. In extreme cases, nothing is heard but the rustling already noticed. Laennec ascribes the brevity, or apparent absence of auricular contraction in this case, not only to impaired muscular power, but to their contraction commencing before that of the ventricles is completed.

When the walls of the left ventricle are naturally thin, or have become so in consequence of dilatation, the cardiac rhythm is entirely different. The interval of quietude after auricular contraction is no longer audible; the contraction of the ventricles is more sonorous; but its duration less sensibly exceeds that of the auricles, and it is no longer so distinct in the nature of its sound. It results from these dispositions, that in such subjects the arterial pulse is habitually frequent, and the synchronism of the ventricular contraction, and of the arterial diastole, is not so easily recognised. The cardiac shock is also less strong, and the pulsative sphere is more extensive. The concurrence of these signs denotes invariably a heart disposed to dilatation. This state of heart is natural or congenital to many persons; and though it is, in general, connected, with a delicate constitution, slender form, small muscles, a strait chest, and respiration habitually short, yet very good health is enjoyed for many years. In fevers, however, and diseases of the organs of respiration, they suffer, other circumstances being equal, much greater breathlessness than patients of different constitutions. A slight increase of this disposition necessarily produces dilatation of the heart. The changes which then take place in the rhythm consist chiefly in augmentation of the characters now noticed. The ventricular contraction becomes equally short and rustling as that of the auricles, which renders the arterial pulse very frequent; the isochronism of the arterial beat, and the ventricular contraction, can no longer be perceived; and in some instances it is simultaneous with the contraction of the auricles. These changes in the rhythm are accompanied with impaired cardiac impulse and extension of the pulsative area, sometimes as far as the clavicles and arm-pits,—a symptom almost pathognomonic.

In defence of the term *auricular contraction*, M. Laennec has thought it his duty to notice the reasonings and experiments of Dr Barry, who maintains that atmospheric pressure is the principal cause of the motion of the venous blood. This appears to us quite unnecessary. We will not doubt the power of atmospheric pressure if Dr Barry chooses, or the pressure rather of contiguous and surrounding organs, as we think, and as is taught by all good physiologists since the time of Haller, in promoting the flow of blood through the veins. It is manifest that, according to the principles of hydraulics, as the blood in one part of a venous tube is moved to any given direction, its place must be supplied by that behind it, so long as the coats of the vessels are subjected to a uniform and steady pressure. The blood which enters the auricles no sooner is deposited in these cavities, than it is conveyed by their contraction to the ventricles; and when the auricles are again empty, the blood flows into them from the veins, for no other reason but because it cannot easily escape in any other direction. The column of blood behind, the uniform pressure of all the contiguous parts in the venous tube, and the vacuity occasioned by the auricular blood flowing into the ventricles, all concur to make the blood of the vein flow to that direction. But independent of these considerations, it is an anatomical fact that part of the auricle is distinctly muscular; and the muscular apparatus (*musculi pectinati*, as they are named,) is so arranged as to insure contraction of the auricle, so as to propel its blood in no other direction than that of the ventricle. These reasons are sufficient, in our estimation, to justify the idea implied by the term *contraction of the auricles.*

The sound of the heart is liable to various anomalous modifications, of which the most remarkable are the *bellows-sound of the heart and arteries*, the *purring-sound*, and the *acoustic phenomena which take place in the fœtal state and in the gravid womb.*

The bellows-sound consists of three varieties; the *proper bellows-sound*, the *saw-creak, or the rasp-creak*, and the *musical or hissing-sound.*

The *proper bellows-sound* may be heard in the heart, or in any of the larger arteries, *i. e.* the carotid, during the diastole, when it is a substitute for the natural sound which disappears. In a few rare cases, especially in the carotid arteries, this sound is converted into a continuous noise like that produced by the sea, or the vibratory motion of a large shell held to the ear.

The *saw-creak* sound is a close imitation of the noise caused by the motion of a saw, or rasp, or a file.

The *musical*, or *hissing-sound*, resembles that emitted by the wind whistling through an orifice, or the vibration of metallic chords; though its varieties are numerous, they may, by an accurate ear, be referred to a given diapason, and represented by notes in score. Less frequently they are found to ascend and descend in the scale by tones and semitones.

The causes of these modified sounds are imperfectly known. At first M. Laennec regarded the bellows-sound as a sign of contraction of the orifices; and in almost all these cases it is present. He has since, however, found this anomalous thrill in subjects who had no disease of this kind; and, on the other hand, he has met with ossifications of the valves in which the bellows-sound was wanting. It may often be remarked in moments of agony, and in those circumstances in which the heart is over-distended with blood,—when it yields to blood-letting. For the further inquiry into the cause of these phenomena, and the account of the opinions and experiments of M. Erman and Dr Wollaston, the reader must consult the work. The general conclusion is, that the bellows-sound is the result of temporary spasm, and implies no organic lesion of the heart and arteries.

The *cat-mutter, or purring thrill, (le fremissement cataire,)* denominated from its resemblance to the purring of that animal when pleased, is the second form of modification which the sound of the heart assumes. So far as can be known, it appears to depend on much the same cause as the last anomalous sound.

That sound is communicated by the circulating organs of the fœtus, was first shown in 1822, by M. Kergaradec. It appears from the researches of this physician, which are confirmed by Laennec, that the pulsations of the heart of the fœtus may be heard by the stethoscope so early as the sixth month of pregnancy, and sometimes sooner. These pulsations are known by being double, like those of the adult heart, but greatly more rapid, generally double those of the mother. By the same means the existence of a second motion may be detected in the pregnant womb,—an arterial pulsation quite isochronous with the pulse of the mother, and accompanied with a bellows-sound. This pulsation denotes the insertion of the placenta, and is named therefore by M. Kergaradec the *placental pulsation.*

Palpitation, irregularity of beat, and *intermission,* are three modifications of the heart's action, which take place as symptoms in almost all diseases of the heart, and occasionally without change of structure, as mere disordered action.

Of palpitation there are several varieties, all of which agree in the circumstance of the patient *feeling the beat of his heart,* or even hearing it, especially when he is in the horizontal posture. In many cases, palpitations consist in increased frequency only of the beats, the force not being greater than natural. This is common in persons attacked with dilatation of the ventricles. In other cases, palpitation consists in increase, both of the frequency and the force of the beats; and of this we have an example in slight hypertrophy, when the ventricular impulse is stronger than natural.

With palpitation the beat may be irregular; and this may consist either in variation of the frequency of the beats, as in dilatation of the heart;—or in a new and rapid ventricular contraction along with, and instead of the auricular flap, amidst a series of sufficiently regular motions, but attended with a much stronger impulse than any of them;—or, lastly, in each ventricular contraction being followed by several successive auricular motions, which, together, do not occupy more than the duration of one ordinary contraction.

Intermission is of two sorts, the *true* and the *false*. True intermission consists in an actual suspension of the cardiac action; the false corresponds to contractions which really take place, but which are too feeble to communicate their shock to the arteries. The former are frequent in aged persons, without disorder of the health; but, in persons in middle life, they are observed only during diseases of the heart, especially hypertrophy of the ventricles, and in moments of palpitation. The stethoscope shows that they always follow the contractions of the auricles; and they, therefore, depend on the state of quietude being prolonged so much, that no ventricular contraction follows. In the instance of the false intermission, it is sometimes not easy to distinguish between the weak contraction of the ventricles and the ordinary contraction of the auricles. A good example of this intermission, depending on feeble ventricular contraction, is found in that which constitutes the precursory symptom of critical diarrhœa, first distinctly noticed by Solano de Lucque. The observations with which M. Laennec concludes this subject, on the little certainty to be derived from the mere practice of examining the arterial pulse only, as observed by physicians, are highly worth serious attention.

We hasten to the subject of the second section, in which M. Laennec gives, in twenty-nine separate chapters, a full and accurate account of the various diseases of the heart and its appendages. We regret that the sketch which our limits permit us to trace must be very short and rapid.

The most severe, and the most frequent diseases of the heart, are dilatation of the ventricles, thickening of their walls, and the combination of these two states. The continuance of the *foramen ovale* after birth, perforation of the ventricular *septum*, ossification of the sigmoid valves of the aorta, or of the mitral valve, excrescences growing from these valves, productions of different nature which may be formed in the heart, are affections much less frequent, and which generally disorder the health, only when they attain a degree of intensity sufficient to produce hypertrophy or dilatation of the ventricles. Dilatation or hypertrophy of the auricles, still less frequent, are, perhaps, always consecutive affections, produced by a morbid state of the valves, or of the ventricles.

Of all these diseases, the general symptoms are nearly the same. Respiration habitually short and constrained; palpitations and stiflings invariably produced by the motion of ascent, by rapid walking, by mental emotions, and returning even without known cause; frightful dreams, and interruption of the sleep by sudden startings; occasionally the symptoms described under the name of *angina pectoris;* and, lastly, a cachectic paleness, with tendency to leucophlegmatic effusion, which eventually appears,—are all symptoms which, to a greater or less extent, occur in persons affected with disease of the heart.

In an extreme degree, the symptoms are still more obvious. Incapable of bearing the horizontal position, the patient seated rather than laying in bed, with his head inclined on his chest, or thrown back on the pillow, retains this position night and day; his face, more or less swollen, is sometimes pale, but, most generally, has a deep violet tint, diffuse, or confined to the cheeks; the lips, swelled and prominent like those of the negro, are most intensely livid, even when the face is pale; the lower extremities, the scrotum, the labia in females, the integuments of the trunk, the arms and the face even are successively affected with œdematous infiltration. Great derangement of the capillary circulation is denoted by dyspnœa, oppressed breathing, and hemoptysis; racking pains of the stomach, amounting sometimes to vomiting; and, finally, lethargic stupor, coma, and apoplectic seizure, which too often terminates at once the disease and the life of the patient.

Hypertrophy, or excessive nutrition of the heart, (*active aneurism* of the heart of Corvisart,) consists in increased thickness of its muscular substance, without enlargement in the capacity of the cavities. The substance of the organ is, in general, firmer than natural. It may exist in one ventricle only, or extend to both; and it may be general or partial. When the left ventricle is affected, it may exceed an inch, or be even eighteen lines in thickness at the base, which is fully double or three times thicker than in the natural state. When the ventricle is generally affected, it is thickest at the base, and diminishes gradually to the apex; but the apex sometimes participates to the extent of from two to four lines. If the apex is affected, the disease is generally local. In other instances, partial thickening appears most commonly in the neighbourhood of the valves. In the case of the right ventricle, the increased thickness is more uniform, extending over the whole, and rendering it so firm as not to collapse when cut open. The preternatural change, however, is always most distinct in the neighbourhood of the tricuspid valve, and in that part of the ventricle which gives origin to the pulmonary artery. The bulk of the fleshy pillars (*columnae carneae*,) is always much increased; and this condition, which is more conspicuous than in the left, with the great firmness of the muscular substance, forms a striking feature in the anatomical characters of hypertrophy of the right ventricle.

The stethoscopic signs of the first of these affections, are, a pulsative area rather circumscribed; prolonged contraction of the ventricle, strong impulse raising the head of the observer, and a duller sound than natural; short indistinct contraction of the auricle; and frequent palpitation, with or without irregularity and intermission. This disease very frequently induces apoplexy. *(Legallois, Richerand, Bertin.)*

The stethoscopic signs of hypertrophy of the right ventricle, are much the same. The sound of the contractions is not so dull, and they give a stronger impulse at the lower end of the sternum than between the fifth and seventh ribs.

Dilatation of the ventricles, (*passive aneurism* of Corvisart,) consists in enlargement of the cavities of the heart, with thinning of their walls. The muscular substance is at the same time unusually soft, sometimes of a violet colour, in other instances pale and almost yellowish. The extenuation may be so extreme, that the thickest part of the ventricle does not exceed two lines, and the apex is scarcely half a line; or the muscular substance may be so stretched and absorbed, that nothing but a little fat, covered by pericardium, retains the blood. Rupture in such a case, as Burns imagined, seems not impossible; but M. Laennec has met with no example of this accident, in consequence of dilatation of the left ventricle.

The stethoscopic sign upon which only reliance can be placed, is the clear rustling sound of the contractions heard between the cartilages of the fifth and seventh external ribs. In dilatation of the right ventricle again, this rustling sound is heard at the lower end of the sternum. M. Bertin ascribes this disease to obstacles to the course of the circulation; for example, ossified valves, congenital straitness of the aorta and pulmonary artery, professions requiring painful efforts, diseases of the lungs, &c. Though these causes have some influence, the most general and the most powerful is original conformation.

Dilatation with hypertrophy, (*active aneurism* of Corvisart).—This complication is common. Its signs are those of dilatation and hypertrophy united. Strong impulse and distinct sound of the ventricular contractions; those of the auricles sonorous; and extensive pulsative area prevent it from being overlooked or mistaken.

Dilatation of one ventricle, with *hypertrophy* of the other.—The most ordinary forms of this complication, which, though rarer than the last, is not uncommon, are the following: 1. hypertrophy with dilatation of the left ventricle, and simple dilatation of the right; 2. hypertrophy with dilatation of the left ventricle, and simple hypertrophy of the right; 3. hypertrophy with dilatation of the right, and simple dilatation of the left; and, 4. simple hypertrophy of the right, with dilatation of the left. The last is less frequent. The signs of these affections, even with the aid of the stethoscope, are by no means satisfactorily ascertained.

Dilatation and *hypertrophy* of the auricles is rare, and not always to be known by unequivocal symptoms. Its existence, however, may be suspected, when with the general signs of diseased heart, those indicating affection of the ventricles are wanting, and the auricular contractions are heard by the stethoscope at the top of the sternum, under the clavicles, or upon the ribs.

Induration of the substance of the heart.—This consists neither in ossification nor in cartilaginous degeneration, but in peculiar firmness resisting the knife, and causing a grating sensation when cut. It is generally associated with more or less hypertrophy.

Softening of the substance of the heart.—Flabbiness, and a shrunk aspect of the cardiac muscular fibres, with more or less facility of being torn, constitute a state by no means unusual. The change of colour was noticed above. M. Laennec regards this change as a peculiar affection. It may be so;—and there is reason to think, that as it almost always is combined with extenuation and dilatation of the organ, it may be one of the causes which dispose to that disease. M. Bouillaud regards it as the effect of inflammation. Is it ever the result of the rheumatic action affecting the heart?

The chapters on *atrophy*, *displacement* and malformations may be omitted. Displacement is invariably the effect either of a foreign growth, or a morbid secretion pushing the heart upwards, or towards either side, as may be. It is not uncommon for the heart to be thrust into the right side in chronic pleurisy, by the purulent effusion increasing so much as to occupy the whole left side of the chest.

Carditis. Admitting the possibility of two forms of inflammation of the heart, general and partial, M. Laennec contends that, though partial inflammation, or small inflamed patches of the heart are not uncommon, yet general inflammation of the organ, either acute or chronic, is a thing almost unknown in the records of medicine. He regards the cases given by authors, and especially those detailed by Corvisart, as examples of pericarditis, attended with the discoloration which so often accompanies this membranous inflammation. At the same time, he does not deny the possibility of the fact, which he admits is established by a case described by Meckel, in the Memoirs of the Berlin Academy, in which purulent matter is said to have been infiltered among the muscular fibres of the heart. He considers this case, however, as affording no satisfactory information on the nature or symptoms of the disease, and scarcely proving its actual occurrence. We are pleased with this rigid adherence to matter of fact, and indisputable proof. We admit that his criticism applies to the cases of Corvisart, and to most of those which we have read or seen; even to those which Dr Davis published under the name of *Carditis*. We must be permitted to say, however, that M. Laennec has been misled, by his imperfect acquaintance with English medicine; and he might have found the very test of cardiac inflammation which he demands, in a case recorded by Mr Stanley, in the seventh volume of the Transactions of the London Medico-Chirurgical Society. In this instance, the cut substance of the heart was exceedingly dark-coloured, almost black, depending in Mr Stanley's opinion, or the nutrient vessels being loaded with venous blood. The fibres were very soft and loose in their texture, being easily separable and compressible between the fingers. The cut surface exposed in the section of each ventricle, exhibited numerous small collections of dark-coloured purulent matter, in distinct situations among the muscular *fasciculi*, some deep, approaching the cavity of the ventricle, others superficial and raising the pericardium from the heart. The muscular substance of the auricle was also softened, and loaded with blood, but without purulent infiltration.

Partial inflammation is doubtless more common. It generally produces abscesses or ulcers. Beniveni appears to have been the first who noticed an abscess of the cardiac substance; and several are recorded by Bonetus in the Sepulchretum. M. Laennec has seen one instance only in a child of about twelve, in whom an abscess as large as a filbert was found in the walls of the left ventricle. He also states that he found, in dissecting the body of a man of sixty, an albuminous exudation of the colour of purulent matter, and like boiled white of egg, deposited among the muscular pillars of the left ventricle. In this instance it is worthy of notice, that the morbid change was not indicated by any positive sign. The individual exhibited symptoms of acute inflammation of the chest, among which the most prominent were orthopnœa and inexpressible anguish; but without any sign of the precise situation of the malady. A similar conclusion flows from the case of *Benivenius*, which occurred in the body of a person who was hanged, and who had no complaint at the moment of punishment.

Ulcers are still more common both on the external and internal surface of the heart. But the characters of this morbid change have not been correctly noted; and in some instances the rough and unequal surface of a patch of coagulable lymph has been mistaken for an ulcer on the outer surface of the organ. Examples, however, of true breaches, produced by ulceration, are recorded by Olaus Borrichius, Peyer, and Graetz, and perhaps by Valsalva, Morgagni, Albertini, and Lieutaud. Their symptoms are obscure; and auscultation does not enable the observer to recognise their presence. In some rare instances these ulcers terminate in rupture of the heart.

The heart, like other muscular organs, is liable to *Adipose degeneration*, which consists in infiltration of its muscular substances with a matter which possesses all the physical and chemical properties of fat. The substance of the heart at the altered spot is paler than elsewhere, and it assumes a yellowish tint like that of the withered leaf, and, in consequence, not unlike the softened heart in appearance. This degenerated structure proceeds from without inwards. Near the cavity of the ventricles the muscular structure is still distinct; at a short distance it is less so; and at the surface the adipose appearance is quite similar to the fat of the apex of the organ. The symptoms are unknown.

Of the cartilaginous, osseous, and other accidental productions in the cardiac substance, it is needless to speak.

Cartilaginous or osseous degeneration of the mitral and semilunar aortic valves are not uncommon diseases. That of the tricuspid and semilunar pulmonary valves is very rare,—a fact noticed by Bichat, and repeated since his time by most pathological writers, as distinctive of the difference between the internal membrane of the arterial system and that of the venous. This disease, however, is not absolutely unknown; for Vieussens, Hunald, Morgagni, Bertin the elder, Horn, Cruwel, Corvisart, and Burns, have given instances of its occurrence. It is a remarkable circumstance, that the cartilaginous or ossified state of the valves of the right side of the heart is chiefly found in the persons of those who present a preternatural communication between the cavities; and from this Laennec infers, with what justice we will not at present say, that the action of the arterial blood has considerable influence in the production of these osseous deposits. In the left side, in which it is more common, cartilaginous induration affects the fibrous zones of the base of the mitral valve, forming a smooth but irregular ridge which contracts the auriculo-ventricular orifice;—or it affects equally the margin, the middle, and the base of the valve. Ossification appears in general first in the substance of the base of the valve, and then pierces the covering membrane, so as to render the surface of the valve rough and prominent. Eventually it may affect the margin of the valve, when it produces extreme contraction of the opening. The origin and progress of this affection in the sigmoid valves is not essentially different. A slight degree of this disease may occur without much derangement in the action of the heart, or serious disorder of the health. In more severe cases it appears to give rise to the cat-mutter or purring thrill, or to the bellows-flap, or the saw-creak beat. Neither of these symptoms, however, are constant or pathognomonic; and it is only when the bellows-flap or the saw-creak beat in the left auricle has continued for some time, or does not abate after blood-letting, and is conjoined with the purring thrill, that contraction of the left auriculo-ventricular orifice may be affirmed to have taken place. The same signs in the beat of the left ventricle denote contraction of the aortic orifice.

Of *polypous concretions* in the heart and great vessels, M. Laennec admits no fewer than three varieties to be formed during life. The first is doubtful, and requires, we think, to be illustrated by the collation of more numerous and accurate facts than we yet possess. Of the second sort he has no doubt, from their great firmness, almost equal to that of muscular substance, from their adhesion to the walls of the ventricle, their fibrous texture, and the appearance of spots of blood, which he thinks denote incipient organization, and the formation of new vessels. The third, he thinks, may be formed months before death, because they adhere to the walls of the heart,—because they are dry and friable like fat cheese,—and because they resemble, in all respects, the layers of decomposed fibrine found in false aneurisms. The symptoms are neither evident nor certain. But if regular motion of the heart is followed with beats so obscure, confused, and anomalous, that they cannot be analyzed, and if this tumultuous motion is confined to one side of the heart, then the formation of a polypous concretion may be suspected.

Redness of the inner membrane of the heart and large vessels may be of two kinds, the scarlet and the brown or violet. The former M. Laennec has found unconnected with any distinct or constant symptoms during life; but most frequently in vigorous subjects, who have died cachectic after a long and painful agony, in consequence of disease of the heart, or other severe organic malady. The latter he has met with chiefly in persons cut off by severe continued fevers, emphysema of the lungs, or diseases of the heart in general, with agony and suffocation. He does not believe in the inflammatory origin of this coloration maintained by Frank, Bouillaud, and Bertin. Several good remarks on inflammation of the inner coat, and its products and effects, we omit entirely.

Vegetations developed on the valves and in the cavities of the heart are ascribed by Kreysig, Bertin and Bouillaud to inflammation. Laennec questions the justice of this opinion; though he admits, that a false membrane produced by inflammation might form in some rare cases the *nucleus* as it were of concretion. He seems to ascribe them to a partial coagulation of the fibrine of the blood. The symptoms are uncertain, unless when they are so numerous and extended as to contract the valvular opening, when they produce the bellows-flap, or the creaking beat. Four good cases with dissection follow.

The chapters on *Pericarditis, and Hydropericardia* we omit, as the subjects are sufficiently well known. It is also superfluous to attempt to give any abstract of the chapters of M. Laennec on the organic affections of the aorta; as we presume this subject is tolerably familiar to the English reader since the publication of the classical work of Mr Hodgson. It is sufficient to say, that our author discusses this subject at great length, and with his usual accuracy; and the pathologist will find his perusal of it rewarded with much useful, and some novel information.

By a physician so well acquainted with morbid anatomy, and so intimately conversant with the peculiar effects of organic lesions, every observation on the obscure and uncertain subject of nervous affections ought to possess peculiar value. We, accordingly, expected to find much instruction and original matter in the twenty-ninth chapter, in which these disorders fall under consideration. Though we have not been altogether disappointed, our expectations have not been fully realized. We are constrained to confess that Achilles has his heel, and that M. Laennec does not appear to much greater advantage on this subject than other authors. The opinion of Heberden and Parry that *Angina pectoris* depends, in all instances, on ossification of the coronary arteries, had been tacitly abandoned, notwithstanding the authority of Burns and Kreysig; and most rational observers seemed to coincide in the conclusion formed by Hodgson, that "*angina pectoris* and *syncope anginosa* were to be regarded as terms designatory rather of a train of symptoms accompanying almost all organic diseases of the heart, than any particular morbid condition of that organ." Neither this conclusion, however, nor that regarding the sudden death supposed invariably to result from this disease, are correct according to the observation of the author. *Angina pectoris* he contends, in a slight degree, is very common, and is often found in subjects who have no organic affection, either of the heart or great vessels. He admits, that it often *coincides* with these diseases; but as it may take place without them, and as there is no doubt that they sometimes exist without producing its symptoms, he infers that it is nothing but a nervous affection of the heart. He states positively, that he has opened several subjects who had laboured *at once* under hypertrophy or dilatation and *angina pectoris*; yet in none did he find the coronary arteries ossified.

The treatment of this disease, however, is so novel, that we must make it known, at the risk of a smile at the credulity of its author. M. Laennec causes two oval plates of steel, a line thick, and bent to fit the chest, *highly magnetised*, to be applied, one on the left precordial region, the other on the opposite part of the back. Their poles are to be in exact opposition, so that the magnetic current shall traverse the affected part. M. Laennec admits that this method is not more infallible than others generally employed for removing nervous affections; but it has succeeded in his hands, he says, more frequently than any other, in alleviating the anguish and pains of *angina pectoris*, and in protracting their return. The most singular circumstance in this morsel of therapeutic manipulation, is to see a physician, the first in Europe perhaps for anatomical research, pathological inquiry, and habits of close reasoning, reviving the solemn mystery of Mesmer, and the mockeries of animal magnetism. If a second Perkins shall arise, it is to be hoped that a second Haygarth will not be wanting.

On the subject of *Nervous Palpitation* there is not much said. The stethoscope is said to indicate a clear beat, but not strong, and a small pulsative area; and the impulse, though forcible at first, is not really strong. We do not think that stethoscopic examination is of so much utility in ascertaining the existence of nervous palpitation, as that of other causes on which palpitation may depend. The truth is, that if palpitation is unaccompanied with shortness of breath, cough, sense of fulness and tightness in the chest, neither attends nor follows an attack of rheumatism, and comes and goes without giving rise to lividity, swelled face, or œdema of the extremities, it may almost invariably be pronounced to be *nervous* only, without the aid of the instrument. We are almost tempted to ask, whether M. Laennec has perused the observations of Whytt on this subject, or the instructive remarks and case given by Cullen in his Materia Medica? (vol. ii. p. 357.)* Acquaintance with these remarks would have prevented him from committing the mistake which he candidly enough acknowledges with regard to his own person,—that he had ascribed to an organic and mechanical cause, palpitation and irregular motion of the heart, which he was afterwards satisfied arose from disordered digestion, and the pressure of the distended stomach against the diaphragm. The existence of this cause of irregular action of the heart was well understood by the authors we have mentioned. Yet it is not uncommon to ascribe the occurrence of such disorder to organic lesion; and when this inference is discovered to be premature, to claim merit for correcting the mistake.

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* "A gentleman pretty well advanced in life was frequently attacked with palpitations of his heart, which by degrees increased both in frequency and violence, and thus continued for two or three years. As the patient was a man of the profession, he was visited by many physicians; who were very unanimously of opinion, that the disease depended upon an organic affection of the heart, as we have just now said, and considered it as absolutely incurable. The disease, however, after some years, gradually abated, both in its frequency and violence, and at length *ceased altogether*; and since that time, for the space of seven or eight years, the gentleman *has remained* in perfect health, without the slightest symptom of his former complaint."

We must now put an abrupt conclusion to this article. We do so, however, with the conviction that it is almost superfluous to apologise either for its length or its necessary omissions. The merits of the work of M. Laennec are neither to be understood nor appreciated by a review. The conscientious student will be satisfied with nothing short of diligent perusal of the work; and even the most experienced pathologist will not disdain to consult a book in which he finds information so original, so copious, so accurate, and so well arranged.

ART. VII.—*System der Materia Medica*, i. e. *System of Materia Medica on Chemical Principles, with reference to the External Characters and Medicinal Agency of Drugs, for Physicians, Chemists, and Apothecaries.* By Dr C. PFAFF, Ordinary Professor of Medicine and Chemistry in the University of Kiel, &c. &c. Seven Volumes 8vo. Leipzig, 1814—1825.

THIS very valuable and extensive work is now rendered complete, by the publication of an index to the whole seven volumes. It is not only the most complete repertory of all that has been made known by others of the chemistry of the articles of the Materia Medica derived from the organic kingdoms of nature; but, upon many occasions, our knowledge is corrected and extended by original experiments made by the author himself, which entitles the whole to the confidence of the reader. To each article is also subjoined a list of the best works or memoirs upon the subject. The inorganic substances are treated of in less detail, Dr Pfaff contenting himself with a reference to the classical work of Buchholz.

The arrangement of Dr Pfaff's work is on purely chemical principles, and a table of it has been given in the last edition of Dr Duncan's Edinburgh Dispensatory, p. 172. In the five first volumes he had collected all that was at that time known upon the subject, but the progress of organic chemistry has been so rapid since the work was begun, that the two last, or supplementary volumes, are entirely occupied with the recent additions to the chemistry of the Materia Medica, of which they give the most systematic view which is before the public.

PART III.

MEDICAL INTELLIGENCE.

Report on the Prize-Question concerning the Yellow Fever, proposed by the Duke of Oldenburg. Communicated to the Editor by G. von dem Busch, M. D. of Bremen.

THE Duke of Oldenburg offered, in November 1822, a prize of 200 Dutch ducats, for the best treatise upon several questions respecting the nature and contagiousness of the yellow fever.

The programme published upon the subject was distributed with great care to all parts of the civilized world, and the questions were circulated in a great number of periodical writings, and were communicated also to the physicians of the United States, by the valuable American Medical Recorder. The critical judgment upon the several treatises, that might claim the prize, had been committed to the faculty of Berlin. On the 1st October 1824, which was the last term of delivery, eighteen tracts had been sent in, six of which were in German, four in French, seven in English, and one in the Latin tongue. This last came from Cadiz, and three of the English from the United States.

All of them were returned to Oldenburg by the faculty of Berlin, on the 3d of March 1826. The prize had been decreed to one of the German tracts, the motto of which was, "Opinionum commenta delet dies, naturæ judicia confirmat." Upon opening the sealed note, the author was found to be the *Dr Charles Christian Matthaei*, of Verden, near Bremen, court physician to the King of Hanover.

The report of the judgment passed by the faculty on this treatise was as follows:—

"The author, after having examined the several alleged causes of the disease, showed them to be unsatisfactory, and that there must be some others, as yet unknown; and after having enumerated, and carefully weighed all the reasons hitherto promulgated, for and against the contagiousness of the disease, he at last decided *for the contagious nature of the yellow fever.* The conditional causes of the rise and propagation of the disorder, considered with the utmost exactness and accuracy; and tables containing the symptoms, the progress, and the results of anatomical dissections, drawn up with the utmost care and exactness, tend to prove the nature and identity of the disease, between the tropics, in the north of America, and the south of Europe.

"The opinion of the author is, that the yellow fever appears as a disease, *sui generis* endemical only in low countries of the sea coast, but, in a due concurrence of circumstances, also sporadic in other places. The disease, he says, never made its appearance beyond the 48° north latitude, and a temperature as high as 72° F. is necessary for its production and propagation. He believes that there is indeed a possibility of its being propagated by means of contagion in the sea-ports of North Germany, and by reasons of analogy, answers the question, whether any other malignant diseases can be generated by it, in the affirmative. The measures he proposes, to prevent the propagation of the contagious virus, are such as are generally made use of.

"As an appendix to the treatise, he gives the most important quotations from all the authors who have written upon the subject; an alphabetical catalogue of all the writings to this purpose; an alphabetical enumeration of all the epidemics of the yellow fever; and another of all the places at which it has either prevailed, or ever been perceived; and lastly, geographical maps, giving an easy view of the propagation of the epidemics in the two hemispheres.

"A complete literature, a careful and ingenious comparison of facts, and a critical examination of them, give so distinguished a value to this treatise, that the faculty did not hesitate to adjudge the prize to its author."

The names of the professors of the faculty of Berlin, who examined the treatises, and adjudged the prize, are—*Link*, *Berends*, *Graefe*, *Knappe*, *Hufeland*, *Rudolphi*, *Horn*, *Henkel*, *Siebold*, *Wolfart.*

Medical Schools in the Prussian Universities. From Jahrbuch,—*i.e.* Calendar of the Royal Prussian Universities, vol. i. 1821-22, 12mo, Berlin, 1824.—The compiler does not confine this publication to a mere list of names, but gives a short account of all the institutions and circumstances connected with each of the universities in the Prussian dominions. These are six in number,—Berlin, Bonn, Breslau, Greifswald, Halle-Wittemberg, and Konigsberg. The constitution of the German universities, while it obliges each professor to give public and gratuitous lectures upon some particular subject, allows him to give private instructions, for which he takes what fee he pleases, upon any subject or subjects which he thinks likely to attract pupils, and thus not only is there a greater subdivision of branches than to us may seem proper, but there is a rivalry or competition excited among the professors themselves. There are three classes of university teachers in Germany, the ordinary, and extraordinary professors, and a third class called private teachers, but we do not know exactly their relation to each other. It will probably not be uninstructive to our readers to have an account of the varied labours of the professors of Berlin.

Dr Rudolphi, teaches, as subjects of distinct courses, in the summer half-year; 1. Medical Encyclopedia and Methodology; 2. Comparative Anatomy; 3. Physiology; —in the winter half-year, 1. Anatomy; 2. Anatomy of the organs of the Senses; 3. Practical Anatomy, in conjunction with Dr Knape; 4. Pathological Anatomy.

Dr Knape teaches in summer, 1. Osteology; 2. *Das Formulare ?* 3. Medical Police;—in winter, 1. Osteology; 2, Syndesmology; 3. Splanchnology; 4. Juridical Anthropology.

Dr Horkell in summer, 1. General Physiology; 2. Introduction to Vegetable Physiology;—in winter, 1. Introduction to Physiology; 2. General Physiology.

Dr Koreff in summer, 1. Natural History of Man; 2. Diseases of the Mind, Dispositions, and Passions;—in winter, 1. Natural History of the Human Race, *publicly*; 2. Physiology of Man; 3. Diseases of the Mind.

Dr Link in summer, 1. some subjects of Medical Anthropology;—in winter, 1. Pharmacology; 2. Medical Chemistry.

Dr Berends in summer, 1. Principles of Pathology; 2. Introduction to Clinical Medicine; 3. Explanation of Celsus, *publicly*;—in winter, 1. General Practical Pharmacology; 2. Introduction to Clinical Medicine, in the Medical Clinical Institute of Berlin; 3. Explanation of Celsus, *publicly*.

Dr Wolfart in summer, 1. Mesmerism; 2. Semeiotics; 3. Special Therapeutics of Nervous Diseases, *publicly*; 4. Clinical Practice;—in winter, 1. Mesmerism, and General Therapeutics; 2. Clinical exercises; 3. Commentaries on the Aphorisms of Hippocrates, *publicly*.

Dr Hufeland sen. in summer, 1. The second part of the Therapeutics of Chronic Diseases; 2, Medico-surgical exercises in the Royal Polyclinical Institution;—in winter, 1. the Special Therapeutics of Chronic Diseases; 2. Medico-surgical Exercises in the Polyclinic, with the assistance of Professor Osann and Dr Busse.

Dr Von Siebold in summer, 1. the Diseases of Pregnant, Parturient, and Delivered women; 2. Theoretical and Practical Midwifery; 3. Course of Practical Exercises in touching, and the obstetrical operations manual and instrumental on the puppet; 4. Obstetrical Clinics;—in winter, 1. the Methodology and History of Midwifery; 2. Theoretical and Practical Midwifery; 3. Course of Practical Exercises in touching, and the obstetrical operations manual and instrumental, on the puppet; 4. Obstetrical Clinics.

Dr Graefe, in summer, 1. Special Surgery; 2. Ophthalmic Medicine in the Clinical Ophthalmic Institute.—In winter, 1. Ophthalmic Medicine; 2. Akiurgy, or the knowledge of the whole surgical operations; 3. Surgical and Ophthalmic Clinics in the Surgical Institute.

Of the Philosophical Faculty, Dr Hermstadt teaches, in summer, 1. The Analytic Chemistry of organic bodies; 2. Medical Chemistry publicly; 3. General Technology.—In winter, 1. General Experimental Chemistry; 2. Medical Chemistry publicly; 3. Agranomical Chemistry.

Dr LINK. 1. General Natural History; 2. General and Special Botany, with Demonstrations and Excursions.—In winter, 1. On the Plants which he calls Kryptophyta publicly; 2. The Physical Geography and History of the Antediluvian World.

These are the ordinary Professors who teach subjects connected with the healing art; the extraordinary Professors and private teachers offer a still greater variety of subjects to the curious student. To the former class belong Drs KLUGE, OSANN, HUFELAND junior, REICH, WAGNER, RUST, and RICHTER, in the Medical Faculty; and Drs TURTE and HAYNE in the Philosophical. To the latter, Drs ECK, SCHUBART, BŒHR, HECKER, LORINSER, BAREZ, FRIEDLAENDER, YUNGKEN, RECKLEBEN, OPPERT.

The number of students in the summer session 1821, was 991, of whom 342 were medical. The following winter, the total students were 1172, of whom 364 were medical. There were graduated, 2 in Theology, 1 in Laws, 50 in Medicine, and 4 in Philosophy.

The public institutions are the Royal Library, the Polyclinical Institution by Hufeland; a collection of Surgical Instruments and Bandages, under the direction of Drs Kluge and Blœmer; the Zoological Museum under Lichtenstein and Kluge; the Anatomical Museum under Rudolphi; the Mineral Cabinet under Weiss; the Obstetric Institution under Siebold; the Medical and Surgical Clinics under Berends and Graefe; the Botanical Garden under Link; and the Anatomical Theatre.

Bonn.—In this University, the Professors of the Medical Faculty are BISCHOFF, HARLES, MAYER, NASSE, STEIN, VON WALTHER, and WINDISCHMANN; and of the Philosophical Faculty, Professor NEES VON EISENBECK. Medical Private Lecturers, Drs NEES VON EISENBECK, KRIMER, and WEBER.

In winter 1820-21, the students were 626; of whom 147 were medical. In summer 1821, the students were 621, and the medical 126. Six degrees were granted in medicine.

Breslau.—The Professors of the Medical Faculty, are REMER, BENEDICT, ANDREE, OTTO, WENDT, TREVIRANUS, and BARTELS. In the summer 1821, the number of students was 556—75 being medical. In winter, 557—60 medical; and there were 9 degrees in medicine.

Griefswald.—Medical Professors, VON WEIGEL, MENDE, ROSENTHAL, and SPRENGEL. The total students were 70; medical 10; and no degree was granted in 1820-21.

Halle-Wittemberg.—Medical Professors, DŒUFFER, DZONDI, MECKEL senior, SCHREGER, SPRENGEL, and WIENHOLD. Extraordinary Professors, FRIEDLANDER, KRUTENBERG, MECKEL junior, and NIEMEYER. Students, 825; medical, 76. Thirteen degrees in medicine were granted.

Koenigsberg.—Medical Professors, BURDACH, UNGER, ELSNER, and BŒHLER. Extraordinary Professors, HENNE, SACHS, VON BARE. Medical students, 15; in winter, 19; and 2 degrees were granted.

On the Chemical Properties of Fecula and Several Amylaceous Substances. By M. Caventou. (*Annales de Chimie et de Physique, Avril* 1826.) M. Caventou has recently repeated the previous experiments of chemists on the properties of fecula, with the view of ascertaining the cause of the differences observed among the amylaceous substances of commerce. Fecula, it is well known, is insoluble in cold water; but it is rendered somewhat soluble by exposing it to a moderate degree of heat. If it is roasted at a temperature a few degrees above 212°, and under that at which it undergoes decomposition, it becomes slightly soluble in cold water. The same change is effected at a lower temperature by the aid of water. When starch is heated in water to 140° or 160° F. it is converted into a paste which, like roasted fecula, is soluble, though feebly, in cold water. Chemists have usually considered starch in the form of paste to be merely hydrated; but they are perfectly aware that it is materially modified, as it is no longer insoluble in cold water, and its insolubility cannot be restored. Caventou considers it in this state to be the same as the *amidine* which M. de Saussure believed he procured by the process of putrefaction, but which was really formed by the action of boiling water on the undecomposed part of the fecula.

Amidine is characterized by giving a deep blue compound with iodine. When it is boiled long in water, it becomes much more soluble, and then gives a purple colour with iodine. This change, like the former, may also be produced by heat alone. If starch is roasted at a temperature a little above that at which amidine is formed, it is rendered at once very soluble in cold water, and strikes a purple colour with iodine. The same alteration is caused very rapidly by adding to the water used for boiling the starch a twelfth part of sulphuric acid. When starch is boiled still longer, it becomes even more soluble, or almost deliquescent, and no longer undergoes any change in colour from the action of iodine.

Most of these facts were well known before; but Caventou seems to be the first to have connected them together, and traced their cause to the agency of heat alone. They have enabled him to settle very satisfactorily the relative nature of the chief amylaceous matters used in medicine and cookery. *Arrow-root* is insoluble in cold water; at least it yields only a trace of gummy matter to it. But it forms with hot water a paste, which becomes blue with iodine, and undergoes the same changes with heat as the paste of wheat or potato-starch. It is therefore unmodified and almost pure fecula. *Sago* yields a large part of its substance to successive portions of cold water; and the remainder, with the exception of a few fibres, is entirely dissolved by boiling water. All these solutions become blue with iodine. Now sago, like common starch, is procured, with the aid of cold water, from the raw material, by the operations of affusion and subsidence. It must therefore have originally been insoluble in cold water, and consequently must have undergone the process of roasting. In short, it is not fecula, but amidine. *Tapioca*, for the same reasons, is also amidine, but more perfectly prepared by roasting than sago. It is procured by the affusion of cold water; yet it is entirely and easily soluble in successive portions of that fluid without the aid of heat. The solutions become blue with iodine. *Salep*, though usually considered an amylaceous substance, appears, from the experiments of Caventou, to be quite different. Cold water dissolves a large proportion of it; and the matter dissolved, whether in its fluid or solid state, does not differ in any essential particular from gum. At the same time the residue becomes a tremulous mass like jelly. When treated with boiling water, it yields a very small portion of matter, which appears to be fecula, as the water gives a blue colour and precipitate with iodine. At the same time it swells up, but undergoes no farther change. Its other properties associate it with the bassorine of Bucholz, procured from gum tragacanth. In fact, salep is closely allied to that substance in nature and composition,—the gum tragacanth consisting of gum and bassorine, generally without any fecula.

Analysis of Bryony root, by M. Dulong, of Astafort, [*Journal de Pharmacie, Mars* 1826.]—The root of the *Bryonia alba* is well known to be an active poison, belonging to the order of Acrids. It causes spreading inflammation of the subcutaneous cellular tissue, when applied to a wound. Half an ounce has proved fatal to a dog when swallowed; and Pyl has recorded an instance of speedy death in the human subject, from the imprudent use of the infusion in the dose of two wine-glassfuls. These active properties have led various chemists to examine it; but the analyses performed before that of M. Dulong were imperfect. He has found that the active part of the root is a bitter principle, similar to the *coloquintine* or poisonous principle of colocynth. It is soluble in water and alcohol, insoluble in ether, and has not any effect on the vegetable colours. It is contained entirely in the juice of the root. The only other important principle is fecula, which, according to Dulong, is very abundant, and may be easily washed out. As the poisonous properties of the root reside entirely in the juice, the fecula may be separated in a state of purity, just as arrow-root is procured from the *Maranta*, and one variety of Cassada from the *Jatropha manihot*. Dulong thinks this process might be profitable, as the roots grow to an immense size, being often a foot long and four inches in diameter.

On the Preparation and employment of the Chloride of Lime, for destroying fetid and infectious effluvia, [*Kopp's Reise in Deutschland und Frankreich*, p. 198.] Several years have elapsed since M. Labarraque, a Pharmacien of Paris, discovered that the chloride of lime, now generally employed instead of chlorine for bleaching, likewise possesses the power belonging to that gas of destroying putrescent effluvia. It was afterwards remarked that it has also general antiseptic properties, and it has farther been, with much reason, presumed to possess the power of destroying the effluvia of infectious disorders. Dr Kopp of Hanau, in a late visit to France, had an opportunity of witnessing its employment at the *Morgue* of Paris, and bears unqualified testimony to its rapid and perfect operation. As we have not hitherto taken any notice of this important discovery, we shall endeavour to remedy the omission, by giving an abstract of a report which was lately delivered to the prefecture of Paris by Professor Marc, as president of a committee of the Board of Health, and which has been translated at length in the work of Dr Kopp. The report, we may add, has been adopted by the French government, who have advised the use of the remedy in all hospitals and lazarettos.

The first experiments were made at the *Morgue*, on a dead body far gone in putrefaction. Half a pound of chloride of lime being dissolved in about 20 pounds of water, the solution was poured over the body, and the board on which it rested. In one minute the smell was almost destroyed, and it disappeared entirely when the washing was repeated. The superintendent of the institution has uniformly remarked, that bodies washed in this manner remain fresh much longer than others. The next experiment was made with the public urine-tubs of the Palais-Royal, the disgusting fumes of which render this almost an *experimentum crucis.* About a quart of the solution was mixed with the contents of one of them, and the urinous odour was completely destroyed in a single minute. Similar experiments were made, with the same results, in the necessaries of the *Café des Variétés*, and the *Passage du Gymnase*,—places of which we cannot give a better idea, than by mentioning that no Englishman ever went to any of them twice. After relating these experiments, the reporter proceeds to mention the various establishments where stores of it should be kept under the direction of the prefecture, and adds some instructions regarding the method of employing it. The powder should be dissolved in 40 or 45 parts of water, and when it is used for removing the putrid odour of dead bodies, it should be poured over them twice or thrice a-day, according to the temperature of the weather, and the bodies should be kept over night in coarse linen wrappers steeped in solution. In private families, when a dead body has begun to putrefy before burial, this plan will be found exceedingly useful for preventing the impregnation of the furniture with the putrid effluvia. It has been likewise found to be of signal advantage for facilitating the medico-legal examination of putrid bodies. A quantity of the solution is to be kept at hand, and poured over the various parts as they are successively exposed.

The chloride which is most easily procured in this country, is the common bleaching powder, originally prepared by Mr Tennant of Glasgow, and now made by most chemical manufacturers. That made by Mr Tennant is charged so completely with chlorine as to form a bichloride. As this preparation may not be easily got in some parts of the country, we subjoin the following formulas published lately by Labarraque in the *Journal de Chimie Medicale.* For preparing the dry chloride, he recommends that a twentieth part of common salt be mixed with slaked lime. This mixture being put in deep earthen-ware pots, and the tube of the retort plunged to the bottom, the chlorine is to be disengaged from a mixture of 576 parts of muriate of soda, and 448 parts of oxide of manganese, by means of sulphuric acid diluted with three-fourths its weight of water. The acid should be added gradually by means of an S tube. A solution may likewise be made at once in the following manner. A mixture of three parts of slaked lime, and one part of muriate of soda is to be diffused in a proper bottle, in twenty times its weight, or eighty parts of water; and while the gas is passing through it, the mass should be occasionally stirred with a wooden agitator. The solution thus procured may be diluted with its weight of water before being used.

On the direct application of Galvanism to the nerves of the orbit, as a remedy for Amaurosis, by M. Magendie, (Journal de Physiologie, Avril 1826.*)* If Magendie is correct in the opinion he has deduced from his experiments on the fifth cerebral nerve,—that its integrity is necessary to vision,—it follows, that amaurosis may be sometimes owing to a disease in that nerve, as well as to an affection of the optic nerve in other cases. He has therefore conceived it possible, that some kinds of amaurosis may be successfuly treated by applying stimuli to those branches of the fifth nerve, which are within the reach of the surgeon, and in the neighbourhood of the orbit. The stimulus which struck him as the best to employ for determining the justice of this idea, was acupuncturation, and galvanism applied through means of the needle. Having first ascertained, by experiment on animals, that needles may be thrust into the substance of nerves without injury, he proceeded to try in the first place the effect of simple acupuncturation. In a young man affected by amaurosis, with insensible pupil, he introduced a steel needle into the frontal nerve where it emerges from the supra-orbitary hole. The patient immediately felt the same sensation as when the cubital nerve is struck at the elbow, namely, a prickling at all the extremities of the nerves. The operation was repeated on the infra-orbitary nerve with the same result. Afterwards he succeeded in puncturing in the same manner the lacrymal twig of the fifth nerve; and immediately the patient experienced a peculiar sensation in the orbit, and the tears flowed profusely. At each puncture of these nerves the iris contracted, but the amaurosis was not diminished. Magendie then proceeded to combine with the puncturation the more powerful stimulus of galvanism, by thrusting one needle into the frontal, and another into the infra-orbitary nerve, and connected one with each end of a voltaic pile of twelve pairs of six-inch plates. Each time the electric circle was established, the patient felt a painful commotion in the course of the nerves and in the bottom of the orbit, while at the same time the pupil contracted, and the light became more distinct. This treatment being continued fifteen days, the pupil returned to its orignal dimensions, and the amaurotic state of the eye was evidently diminished; but Magendie was unable to observe the future progress of the case, as the patient left Paris. Since then he has applied the same treatment to several cases of incomplete amaurosis, and with almost uniform advantage. In one instance of amaurosis of the external half of the retina, accompanied with palsy of the upper eye-lid, and *rectus internus* and *superior* muscles of the eye, a complete cure was effected in three months. He has not hitherto had an opportunity of trying a case of perfect amaurosis. Meanwhile he assures us, that the pricking of the nerves is never followed by the slightest inconvenience, which can form an objection to the experiment; and, therefore, it is highly expedient that this new remedy for so obstinate and unfortunate a malady be subjected to immediate trial by others.

On the cause of the Yellow Colour of the Skin and Fluids in the Icterus of new-born children, by M. Lassaigne. (Journal de Chimie Médicale, Juin 1826.*)*—M. Lassaigne has very properly remarked, that the opinion entertained of the cause of the colour of the skin in the icterus of new-born children is founded rather on analogy than experiment. Having resolved to subject it to the test of experiment, he proceeded to analyze the subcutaneous cellular tissue, and the various fluids which are tinged in this disease, with the view of detecting in them the principles of the bile. He has in consequence discovered that the colour is caused by a yellow matter which possesses some, but not all of the properties of the colouring matter of the bile. It resembles the yellow matter of the bile in forming a green solution with the caustic alkalis, in being precipitated dark green from that solution by the acids, and in being turned to greenish, then to blue, and finally to violet, by nitric acid; but it differs in being soluble in alcohol. These points of resemblance he considers to be insufficient for warranting the conclusion that they are the same matter; and as he was never able to detect any of the other principles of the bile either in the subcutaneous cellular tissue, or in the yellow serum extravasated into the cavities, or in the blood, he infers that the cause of the colour is not absorption of the bile.

On the treatment of Diffuse Cellular Inflammation by pressure and bandaging. By M. Velpeau. (Archives Générales de Médecine, Juin 1826.*)*—M. Velpeau announces that in the hospital of the Medical Faculty of Paris, and under the eyes of the pupils, he has succeeded in proving that the surest, speediest, and safest cure for the spreading inflammation of the subcutaneous and intermuscular cellular tissue is pressure, applied by means of spiral bandages. In the paper from which this extract is taken, he has published ten cases, which were treated successfully in that manner; and from these cases it appears, that the method is applicable under almost all possible circumstances, and that it is not attended, as most people would naturally imagine, with any torture to the patient, even at the time of application. He has applied it in cases of spreading inflammation subsequent to the removal of tumours, or supervening upon old ulcers and sinuses, or upon contusions, or even originating without any apparent cause; and he announces a future paper on its beneficial effects in that most formidable of all forms which supervenes occasionally upon venesection. He has employed it chiefly when the disease was fully formed, that is, when the superficial inflammation had ma[illegible] and when there was distinct evidence of the effusion of lymph at least, if not of pus also, into the cellular tissue. But he considers it equally applicable to the incipient stage, and appears to have delayed it generally till a later period, because other practitioners, who were concerned in the treatment, wished to try previously the effect of other remedies. That pressure may be applied with advantage in the advanced stage of the disease, has been long known to surgeons; but it is, we believe, a new fact, though not quite so extraordinary as the author would have us to think it, that in the acutest state of subcutaneous inflammation, when the patient cannot bear the part to be touched, or even moved, pressure may be applied, provided it is done uniformly, not only without causing any considerable increase of pain at the time, but likewise with the effect of diminishing or altogether dispelling it in a few hours. When the inflammation was very acute, and the skin very fiery and tender, the first application of the bandage generally caused a trifling increase of pain; but if it was applied very carefully and uniformly, the pain gradually abated, and in two hours it was commonly so much removed, that the patient expressed astonishment at the relief. The method consists simply in enveloping the whole or greater part of the affected limb with a roller-bandage, taking care to apply the folds very smoothly, and to make the pressure diminish a little over the inflamed part. The swelling, redness, and general fever decrease with the pain; and four or five days are generally sufficient to effect a thorough cure.

The following are two characteristic examples of the usual progress of the symptoms.—*Case* 1. A girl of a healthy habit had a tumour of the size of a fist removed from the ham. The wound did well for eight days. But at that period the skin around became red and tender, and the pulse rose. These symptoms went on gradually increasing, and at the end of the third day the fever was very high, there were signs of subcutaneous suppuration around the wound, and the inflammation continued to spread up the thigh with a red, tense, and painful margin. A bandage was now applied near the groin, and rolled gradually downwards, while another commencing over the calf was brought gradually upwards, till both met and covered completely the inflamed part of the limb. Before evening the fever had greatly abated, and the patient passed a good night. Next morning the inflammation occupied only half the surface it did the day before, the pain was almost gone, and the appetite had returned. On the second morning, the bandaging being continued, the greater part of the skin was pale, and on pressing the lower third of the limb, some purulent matter was expelled from the wound. On the third morning the redness had entirely disappeared, the cuticle was scaling off, and the wound began to look clean. From that time the cicatrization went on regularly.—*Case* 7. An elderly woman fell while carrying a heavy burden, and thought she had fractured her leg. There was no proof, however, that she had sustained any other injury than a severe contusion near the ankle. The pain was exceedingly acute, and next morning, notwithstanding the use of leeches, there was evidently inflammation of the injured part. Leeches were again applied, but the redness continued to spread; and on the fourth day, it had extended over most of the foot, and a fourth part of the leg. The antiphlogistic treatment was continued. The disease, however, gradually extended to the calf of the leg, and became attended with great swelling, glistening redness, and most acute pain. About the twentieth day of her illness, the inflammation being still decidedly on the increase, and suppuration threatening, it was resolved to have recourse to the plan of bandaging. Compresses steeped in spirits were first applied over the inflamed part, and a roller then drawn very carefully round the whole limb, from the toes to the knee. This was done without causing any great uneasiness, except what arose from the motion of the limb. In four hours the patient declared *she was in paradise;* next morning there was hardly any pain, the redness and swelling were reduced to one-fourth of what they had been; on the third morning, the whole remaining disease consisted of some œdema round the ankle, the redness had entirely disappeared, and pressure could be easily borne. Desquamation followed; and on the sixth day of the treatment the woman was completely cured.

On the treatment of Rheumatism by Fumigation with Camphor, by M. Dupasquier. (*Revue Médicale, Mai* 1826.)—M. Dupasquier thinks that the treatment of rheumatism by camphor fumigations, as proposed in 1808 by M. Chéze, has not received from physicians the attention which it deserves. He says he has of late employed it very frequently, and has found it invariably successful in that most obstinate and painful form of the acute and subacute varieties of rheumatism, in which the inflammation shifts from joint to joint, and sometimes transfers itself to the internal organs.

Its primary effect is to produce an immediate and copious discharge of perspiration. In this respect it does not differ from other kinds of fumigation, or the simple vapour-bath. But the sweating continues much longer, and the relief of pain is both much more certain at the moment, and much more permanent. The disease often recedes on the first application of the remedy, and seldom resists beyond the second or third day. The quantity required for each fumigation is about an ounce for an adult; but no harm flows from using a larger quantity. It should be employed twice, thrice, or four times a-day, according to the strength of the patient, and the severity of the disease; and it should be persevered in for seven or eight days after the inflammation has subsided. M. Dupasquier considers that camphor used in the way of fumigation has a twofold action. Like other vapours, it condenses on the skin, and consequently heats it, and stimulates the capillaries to increased action. But it likewise enters the absorbent vessels, and exerts a sedative action on the nervous system,—an action which the experiments of Orfila and Alexander, he conceives, have assigned to it when it enters the blood. This sedative action counteracts the irritable state of the general nervous system, which some recent authors have supposed to constitute the cause of the frequent metastasis of rheumatism.

On spontaneous Erosion of the Stomach, its symptoms and treatment. By Dr Pitschaft of Carlsruhe. (*Rust's Magazin für die gesammte Heilkunde.* 2 *Heft* 1826.)—That species of erosion of the stomach which Mr John Hunter ascribed to the action of the gastric juice after death, and which the Parisian pathologists believe to be the results of a vital morbid process, has been lately described with minuteness by various physicians as occurring in infants. Among the authors who have written on the subject may be mentioned Jaeger of Stuttgard, Cruveilhier of Paris, and Dr Gairdner of this city. Dr Pitschaaft has endeavoured to supply a great deficiency in our present knowledge of the disease, by describing the symptoms through means of which it may be recognised during life. It occurs, he says, only among the children of unhealthy mothers, or those who are too soon and too much fed without milk, and whose mind is precociously developed. The first symptoms are paleness of the countenance, coldness of the skin, with occasional flushes of heat, dulness, and flaccidity of the muscles. Loss of appetite succeeds, with excessive thirst, dry shrivelled lips, and dry cracked tongue. At the same time the child vomits all his food, and the alvine discharges become frequent, loose, and consisting of half-digested aliment and slimy matter, like bookbinder's paste with shreds of spinage in it. He is constantly in a state of lethargy, from which, however, he is roused by the slightest touch; and his senses remain active to the last. The countenance, when the disease is fully formed, expresses pain, but not acutely, the mouth has a sorrowful appearance, the look is languishing, the eye half open, the pupil turned upwards during sleep, and the whole physiognomy oldish. He whines frequently, and is so very fretful that if any one looks at him steadily even from a distance he cries and shifts his posture. The pulse is at first slow and intermitting, and does not become quick till near the close; frequently there is a slight cough, and an erysipelatous inflammation of the eye-lids; the respiration is not much affected at first, and becomes laborious towards the end. His belly is rarely much swollen. The urine is very often diminished in quantity.

In cases, which the author supposed from the foregoing symptoms to be of this description of disease, he found the mineral acids useful, but more recently he has resorted to the acetic acid, which he gives in the form of pyroligneous vinegar, with eight parts of syrup, and sixteen of the distilled water of orange-flower. He recommends at the same time that the food consist chiefly of barley-water sweetened with sugar, and that it be given in small quantities at a time. His description of the disease accords very nearly with that given by Dr Gairdner in the second volume of the Edinburgh Medico-Chirurgical Transactions, but is more minute. We question, however, whether it is, as the author thinks, *pathognomonic*.

On the change which the Blood undergoes in various Diseases. By M. Velpeau. (*Revue Médicale, Juin et Juillet* 1826.)—M. Velpeau maintains, that, in discarding the ancient doctrines of the humoral pathologists, physicians of the present day have neglected too much the alterations which the blood undergoes, and the effect of these alterations in producing disease; and in particular accuses of irrational ultraism the modern Brunonians of Italy and France, who would refer every morbid state of the system to a derangement of the solids. In support of his views, he has undertaken to prove by reference to facts, that the circulating fluids are sometimes essentially altered. Commencing with those changes which are most obvious to the senses, he maintains that in some instances of severe symptomatic fever, induced by contusions, contused wounds, or bad fractures passing to suppuration, and spreading inflammation, the general mass of the blood is either partly converted into, or mixed with purulent matter. In proof of this, he refers to several interesting cases which occurred to him in the hospital of the Faculty of Medicine in Paris,—cases in which after death pus was found in the blood-vessels, and effused in various parts of the body, without any symptoms of inflammation during life, or signs in the dead body of inflammation around the cavities that contained the matter. The cases he has related are very interesting in a pathological point of view, independent of the doctrine they are intended to support. The following abstract will illustrate their nature. They are all very similar to each other.—*Case* 3. A young man, nineteen years of age, underwent amputation of the second toe, on account of caries of the metatarsal bone. The operation was succeeded by a good deal of fever, but the wound did well till the fifth day. It then began to inflame, and next day the whole dorsum pedis was red, painful, and œdematous. The external inflammation was prevented from extending by the plan of compression mentioned in one of the preceding articles of Intelligence; but a purulent cavity was formed on the outer and middle part of the foot. On the seventh day, there was an abundant fetid discharge from the wound, the swelling had reached the leg, and the bones under the abscess were necrosed. On the ninth, the fever became accompanied with jaundice and frequent profuse sweating, but there was not any local pain in any part of the great cavities. On the back of the left-hand a slight redness at the same time made its appearance, and fluctuation could be felt under it. On the tenth, the redness was gone, and there was no pain; but as matter was evidently collected, the cavity was opened, and a quantity of fetid pus discharged. The bones under this abscess were not bare. Delirium ensued in the course of the night; and he died next morning. During the whole course of the disease he never complained of pain in any of the cavities, nor was there any local sign whatever of inflammation there, or in any of the extremities, except the foot. On dissection, the skin was found to be separated by matter from the whole dorsum of the foot, and the bones were black and stripped of their ligaments and synovial membrane, but on the plantar region of the foot the only disease consisted of numerous little abscesses. The dorsal veins of the foot were thickened and full of pus, the saphena veins throughout their whole course were perfectly healthy, but filled with pus, and the deep veins of the leg were in a similar state. In the calf and thigh there were many little abscesses, without surrounding inflammation, and having several gaping veins connected with their cavities. Excepting the back of the left-hand, the whole upper extremities were to external appearance quite healthy. There was not any inflammation around the abscess which had been opened during life. From this place to the axilla, the veins of the arm, without being themselves diseased,—except in a few scattered points where they were white and thickened,—contained very little blood, but a large quantity of pus; and many purulent sinuses were likewise found between the muscles. The right-arm was in the same state; and besides, the shoulder-joint contained pus, without any other mark of inflammation within or around the capsule of the joint. The left lung contained, chiefly near the surface, many abscesses varying in size from that of a pea to that of a partridge's egg, the parietes of which were infiltered with blood and pus, but were not surrounded by hepatization or any of the usual signs of active inflammation. The right lung likewise contained a few vomicæ of the same description; and the right cavity of the pleura contained some ounces of a puriform fluid like that found in the shoulder-joint. In the right auricle of the heart there was a fibrinous concretion, which held in its substance a spoonful of distinct pus. In the left auricle there was likewise pus, but it was diffused minutely throughout the clot, so as to form an intimate mixture of fibrin, pus, and red particles. There was no blood in the great vessels, not even in the vena portæ. The inferior vena cava contained a yellowish fluid, exactly like the pus found in other parts of the body; and under the level of the liver, there was a long fibrinous clot with intermingled pus like that in the left auricle. The aorta down to the iliac arteries was empty, except at one point where it contained a semi-purulent, semifibrinous clot like that of the vena cava. The heart and great vessels were themselves quite healthy.

M. Velpeau, on comparing together the facts of this case and of others of a like kind, insists that they prove, that the blood was altered in its nature; meaning, we presume, that it was either converted into pus, or mixed with it. That such was the fact, is shown, he thinks, by that fluid being actually found in the bloodvessels without inflammation, and likewise by its simultaneous deposition in numerous abscesses in different parts of the body, without any sign of acute inflammation around them, either during life or on inspection after death. Such a state of things, he insists, is conceivable only on the supposition that matter is mingled with the blood, and then separated by a species of secretion or exudation from the vessels; and consequently, he concludes, that the disease in cases of the kind, with all its peculiar constitutional symptoms, depends on this depravation of the circulating fluids.

The next set of facts he refers to in support of his general statement, regard the existence of *cerebriform* matter in the vessels and in various parts of the body, under conditions nearly analogous to those observed with respect to the diffusion of puriform matter. One very remarkable case of this sort has been already related by him; but as more are promised in a subsequent memoir, we shall delay the consideration of the subject till another opportunity.

Experiments and Observations on the Effects of Ergoted Rye upon Man and other Animals, &c.[*] (*From Rust's kritisches Repertorium.*)—From these experiments, apparently conducted with every precaution necessary to insure an accurate result, it follows that ergoted rye really exerts a very pernicious influence upon the animal economy. We are the more anxious to call the attention of our readers to this subject, because many authors have denied, and all have misstated, the morbid symptoms produced by this substance. The following experiments, therefore, cannot fail to prove interesting to the profession.

1*st Experiment.*—On the 21st of July, an ounce of spurred rye was infused with 1¼lb. of water; the infusion had a slight tinge of a violet colour, a very disagreeable smell, and an unpleasant insipid taste. Four healthy persons experienced no ill effects from a dose of two coffee-cups full of this infusion.

2*d Experiment.*—On the 20th July, an infusion was made with 2lb. of *boiling* water, and 2 ounces of ergoted rye; this infusion was stronger, of a deeper colour than the first, and had a still more unpleasant smell and taste. At 9 o'clock in the morning, six persons took each three cupsful of this infusion. After the expiration of two hours, three complained of a feeling of heat in the abdomen, and more particularly in the epigastrium, together with a general sensation of uneasiness, considerable nausea, and inclination to vomit. These symptoms subsided before noon, at which time these three gentlemen sat down to dinner with a good appetite. The other three did not experience any annoyance, except a feeling of warmth, and excitation in the region of the stomach.

3*d Experiment.*—As the very disagreeable smell and taste of the infusion had excited a feeling of disgust, it was determined to use the ergoted rye in substance. On the 4th of August, five persons took each two drachms of the latter, spread on three slices of bread and butter. These five, whom we shall call A, B, C, D, and E, wrote down the following account of what they experienced: *A*, in the course of one hour, felt a slight sensation of pain in the epigastrium, together with symptoms of determination to the head, such as vertigo, increased warmth, and redness of the face, &c. In a short time after this he had a natural stool. At ½ past 11,[†] he was annoyed by a considerable dryness of the throat and mouth, periodical pains in the belly, and repeated eructations of an unpleasant taste; at noon, slight nausea; increased flow of saliva, some inclination to vomit, and fetid flatus. In half an hour more, the tormina and borborygmi increased, the nausea continued, and the head became more engaged. At 1 o'clock, repeated thin stools, voided with some tenesmus. At 2 o'clock, when he dined, all these symptoms had disappeared, leaving no other inconvenience but a great thirst, and occasional griping. *B* experienced in half an hour after the dose, a feeling of increased warmth in the epigastrium, and dryness of the mouth. This was soon succeeded by an increase of saliva, repeated eructations, and slight nausea; these symptoms increased until about 11 o'clock, when he felt inclined to vomit. He sought relief by walking about in the open air, but in vain, and soon after vomited, together with other matters, a portion of the bread. At ½ past 11, he vomited the remaining portion; and in ten minutes after he vomited a third time, with much retching. As his stomach was previously emptied, the third fit of vomiting only discharged mucus. The sickness now decreased, but some nausea, and an increased flow of saliva continued the whole day, during which he felt no desire for food, and in the evening still complained of weakness. In *C's* case, the nausea, increased flow of saliva, tormina, and headach, commenced in one hour after the *dose*. He felt himself so sick in the stomach, that he could procure no relief, either by an horizontal position, or by walking about in the open air. The nausea and headach, together with violent pain in the abdomen, continued until 2 o'clock, when he dined, but of course without feeling any relish for his food. After dinner, however, he found himself somewhat better, and a few loose stools about eight in the evening were followed by complete relief. *D* said, that in half an hour after swallowing the ergoted rye, he felt a sensation in his stomach, as if he had not eaten any thing for several days. This sensation soon rose to actual hunger, so that at 11 o'clock he felt himself obliged to eat his dinner, which he did with a good appetite. In quarter of an hour after dinner, he felt himself sick in the stomach; experienced an increased flow of saliva, and considerable pain in the belly]; and in a short time he vomited what he had eaten. The vomiting soon recurred, and the nausea, and tormina continued until 5 P. M., when he had a rigor of several minutes duration, followed by a moderate sweat, after which the pain ceased, and he no longer found himself unwell. *E* felt an increased warmth in the epigastrium at 10 o'clock, and griping pains, his pulse too was hurried, and his face warm and red; at ½ past 10, he experienced a disagreeable sensation in the head, soon followed by a headach, and a sensation of dryness and burning heat in his mouth and throat. The latter were, in the course of half an hour, succeeded by an increased secretion of saliva and mucus, which made it necessary for him to spit constantly. This was accompanied by severe pains in the epigastrium and nausea, which, at eleven, was very distressing. The tormina became now so painful that he could no longer hold himself erect, and, even when in bed, he was obliged to lie with his body bent towards his legs. Although the nausea increased, yet he could not vomit even with the assistance of tickling the fauces, so that from 11 to 12 o'clock, his situation was truly pitiable; towards one, some thin and fetid stools, preceded by borborygmi and flatus, were procured.

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[*] Versuche und Beobachtungen über die Würkung des Mutterkornes auf den menschlichen und thiereschen Körper, &c. &c. Dr C. J. Lorinser. Berlin 1824.

[†] *We suppose this experiment, like the preceding one, began at 9 o'clock.*

These experiments fully establish the pernicious effects of ergoted rye, and others made by the same gentlemen prove that it loses its pernicious qualities when *thoroughly roasted*, for they experienced no bad effects from doses of two drachms of the dried (gedörrten) powder. It was likewise proved that the activity of this substance is not impaired by keeping for two years. A number of experiments were likewise made on men and animals with bread made of ergoted rye, and its bad effects were precisely similar to those already detailed. Fresh bread, still moist and warm, seems its most active vehicle.

On the Marks by which the real King's Bark (Cortex Chinæ Regius) may be distinguished from the Carthagena Bark, (Cortex Chinæ Flavus,) by Dr G. H. Stolze, Professor of Pharmacy at the University of Halle. (Berlinisches Jahrbuch fur die Pharmacie und damit verbundenen Wissenchaften. Herausgegeben von Dr G. H. Stolze. B. xxvii. H. 2. Berlin, 1826.)—The appellation Cortex Chinæ flavus, is, even up to the present time, used for several kinds of bark, and in order to prevent the confusion naturally arising from such a practice, Dr Stolze recommends this term to be rejected, and to call the bark which is generally understood under that name, the Carthagena bark. As the genuine king's bark has for some time past very much increased in price, and is now six times as dear as the Carthagena bark, this last sort is generally substituted for it. But they are very easily distinguished from one another,—the first, (Cortex Chinæ regius,) has a much more bitter taste than the second; when large pieces of the bark are met with having the epidermis on them, they cannot be mistaken one for the other. The rind of the king's bark is of considerable thickness, and the epidermis, when not covered with lichen, is of a dark-brown colour, and the red fibres of the bark may be seen glistening through. The external rind of the Carthagena bark is, on the contrary, very thin, and always covered with dirty-white and ochre-yellow spots, which, on the other bark, are never observed. When the rind is taken off, the Carthagena bark has also a much lighter colour.

In the same Journal is a paper from Professor Sprengel in Halle, on the tree from which the Peruvian balsam, and the balsam of Tolu are obtained. Both balsams come from the same tree, *Myrospermum frutescens*, *Jacq.* which, probably, on account of the different situations in which they grow, produce different kinds of balsam, when growing in New Grenada, affording the balsam of Tolu, and when in Peru the Peruvian balsam. The different species of *Toluifera*, *Myroxolon*, and *Myrospermum*, are all joined in the *Myrospermum* of Sprengel.

Extracts from the Letter of a Physician travelling in Italy.

In passing over the Alps, it is impossible not to be struck with the size and number of the goitres, but our passage was too rapid to enable me to make any inquiries into this subject. The affection is strikingly more frequent in females than in males, and it would seem that there is some peculiarity of texture existing in the male sex, during the mature and vigorous period of life, which is opposed to the operation of the cause of goitre. I met with no decided Cretins, nor with any circumstance which favour the idea of bronchocele being connected with mental imbecility. Cretinism may passively favour goitre by retarding or wholly preventing the phenomena of puberty, but I should think this to be the only connection between the two affections. Though a fair had collected an immense number of Alpine cattle at St Michael, the day that I was there, I could observe no appearance of enlargement of the thyroid gland in any of them. Some circumstances induce me to believe that salt of lime dissolved in the water may have some share in causing the disease. The rapid stream which flows for considerably more than a hundred miles through the winding valley, in the superior part of its course, traverses a district composed of sulphate of lime.

The Roman physicians occupy themselves but little with the doctrines of the north of Italy. Hippocrates and the older authors are still their favourite masters, and some of the medical men are very deeply read in them. Some of the professors set a bright example of industry to their pupils, but I cannot say that there seemed to be much enthusiasm prevailing amongst the latter. The clinical lectures are delivered, *ex tempore*, in a room adjoining the ward. At the university the professors sometimes lecture in Latin, at others in Italian, but the hour is rather curiously disposed of. It is begun and closed by a hasty prayer, and the intermediate space is about equally divided between a Latin dictation, which the pupils transcribe *verbatim*, and the *ex tempore* lecture. Some of the hospitals are very large. This is particularly the case with the Santo Spirito; but though there are wards capable of holding more than 200 or 300 each, absolutely unoccupied, there are others so crowded as to have three and four rows deep of beds on each side. This is said to be done for economy. The windows are high, and the part which opens small; the wards are consequently badly ventilated. There are admirable conveniences for dissection, and very good anatomical theatres, but these advantages seem to be rather neglected. The most striking and numerous preparations in their anatomical collections are monsters, aneurisms, which, for the credit of the Roman surgeons, appear to have been treated by the old method of amputation, and the nervous and vascular systems laboriously, but uselessly detached from the other textures. The hospital which, by its construction and neatness, pleased me the most, is devoted to diseases of the skin. The house patients are all from the neighbouring country, the Romans being only admitted as out-patients. The greater number of inmates are children affected with tinea capitis. They are set to work and paid their earnings on leaving the establishment. The mode of treatment is remarkable; the hairs are plucked out by the roots, by means of pliers resembling blunt bell-hangers pincers. The children mutually perform this operation for each other, and it requires to be often repeated. When the hairs are removed, the little patients come under the hands of a priest, who, with a razor which he hones afresh for every individual, makes slight incisions all over the scalp, which is suffered to bleed for a considerable time. A simple ointment is then applied to the head, which is habitually covered with a bladder. There are merely simple warm and cold baths in this hospital. The lunatic asylum is only a place of confinement, as no means are made use of to promote a cure. At Rome I met with but few new medical works. I may mention a short but very interesting pamphlet on hydrophobia. The author, who formerly lived at Tivoli, but now resides at Rome, seems nearly to have demonstrated that this most distressing affection is only communicatable by the animal in which its origin was spontaneous, and that bites inflicted by those who receive the disease from him are quite harmless. The author ascribes the origin of the disease to the venereal appetite provoked, but not gratified. Dr Bomba, the professor of physiology, and a complete disciple of the old school, has published an essay to prove spurious a supposed aphorism of Hippocrates and another on the mode of connection between the fœtus and the mother.

Notice of the Medical and Surgical Works which have appeared in Sicily since the beginning of the Nineteenth Century.—At the commencement of the last year, a literary and scientific periodical publication, was set on foot in Palermo,[*] the first number of which contains a notice of works on different branches of literature and science, which have appeared in Sicily since the beginning of the present century, and from which we extract all that relates to medicine and surgery. The writer begins with an account of the ancient Sicilian physicians, among whom are mentioned Akron of Girgenti, the empirical scholar of Empedocles, Philiston the Sicilian, to whom the work De Victu Salubri is ascribed; Philonides from Catania, instructor of Pacchus from Antioch, physician of Tiberius, who published a work which is now no more to be found, *De Coronis et Unguentis*. Farther, Hyraclides of Syracuse, and Oto the Sicilian, both of whom are mentioned by Galen in his work on Local Remedies. One of the most celebrated physicians of the middle centuries, was *Sheriff el Edrist of Mazzara*, author of a Description of the Earth, which in those times was highly valued, and was ordered by King Roger to be translated from the Arabic. He went afterwards to Africa, where, in 1122, he died. In modern times, our writer mentions Alcadino, the descendant of Carsino of Syracuse, physician to Henry the Sixth, Emperor and King of Sicily, the author of a Latin poem on the Baths of Pozzuola,[†] and who taught in Salerno; also *Marc Anton Alaimo*, born at Regulbuto in 1510, and who died at Palermo in 1580; and *Josef Galeano*, who was born at Palermo in 1605, and died at the same place in 1665, are also noticed. Dr Casparo Cannata of Modica, wrote a good work in Latin on Purgatives, and Dr Denaro de San Cataldo, one, in the same language, on Hysteria and Hypochondriasis. Dr John Meli conferred on the inhabitants of Marineo a great service, whilst a very fatal plague was raging, that had been caused by the neighbouring marshes, which he immediately ordered to be drained. In the year 1787, he left the first volume of a work,[‡] which, however, on account of the material principles said to be contained in it, was never finished. In the twelfth volume of the Sicilian Memoirs,[§] he published a case on the cure of an insane person in Cimisi, whose malady had been produced by the bite of a spider, (*ragnatello.*) Towards the close of the eighteenth century, the Brunonian doctrine had a great number of followers in Sicily, and was from Joseph Frank's, Rasori's, and Tommasini's example in Italy, very much spread by the younger physicians. In the year 1803, Joseff Straus[||] published a refutation of Brown's doctrine, and Dr Zappata,[¶] in the same year, wrote a similar work. Rosario Scuderi published in Naples an Introduction to the History of Medicine; and, besides, in 1804, he gave out a Sketch of a System of Pathology[**] with five Plates. In 1805, there appeared a work from Dr Vincent Gennardo,[††] containing a plan for the amelioration of Medical Instruction in Palermo. In 1806, there appeared a work from Dr Stephen Traso,[‡‡] on the Brunonian Doctrine, and from Dr Philip Sidoti,[§§] an important work on Medical Jurisprudence. In 1808, Dr Jacob Paul Egroi[*] published a book on the Abuse of Opium. After the death of the young promising physician, Joseph Mirone,[†] in 1809, there appeared a physiological work from his pen, with observations from Dr Maravigna. This last physician is the author of several works on medicine and natural history. Among these are one on the exciting qualities of Opium,—a second on the debilitating effects of the Vegetable Acids,—and a third[‡] on Electricity. In this he maintained, from the experiments of Volta and Galvani, the now generally-received opinion of the identity between electricity and galvanism. His work on the Eruptions of Mount Etna[§] in 1819, is particularly deserving of attention. The abbot, Dr Ignatius Salemi, wrote in 1812 on the extended Education of the Physician; the first volume of it only appeared. Dr Jacob Monterossi published, in 1815, in Messina, a very interesting work[||] on the Influence of the Present Social State on the Developement of Diseases. In the same year, there appeared a work from Dr Francis Scuder[¶] at Catania, containing a very curious opinion on the Causes of Disease. He attributes the origin of all complaints to invisible insects. Notwithstanding this absurdity, the book contains important practical results. Dr Peter Russo[**] published, in the same year, an Oration on the Frequent Occurrence of Phthisis, and the medicines to be employed against it. In the following year, scarlet fever prevailed at Palermo, and was very fatal. The Prætor, Prince Aci, summoned the most distinguished physicians of the town to a council, from whom the following work[††] appeared. In the next year, celebrated for the spreading of the typhus fever through Europe, this disease also broke out in the hospital at Messina, a description of which epidemic was written by Santi Romeo,[‡‡]. We possess also, from the same physician, works on the Cow-Pox, the Plague, and Sulphureous Fumigations. In 1818, Dr Calcagni wrote on the same subject, recommending Gales's fumigations. This physician was also the first who introduced the cow-pox into Sicily, and has done very much towards spreading it in this island, as well as Dr Eutrona, from whom two works on this subject in 1804 and 1809 appeared. There is also a letter from this physician on the internal use of charcoal in intermittent fever, with which he tried several experiments in the large hospital at Palermo. Dr Pascal Bruro translated an English work on the same subject, and annexed to it notes and preface. In 1822, there appeared at Joh. Bapt. Giordano's in Palermo, a treatise from some unknown writer on the Black Disorder, (*Melæna,*) described by Hippocrates. The author considers it to be a flow of blood from the intestines, supporting his opinion on Tissot and Placidus Portal, the surgeon, who, however, is not named in the work, but most probably is the author himself. To conclude the works of the Sicilian physicians, we must mention those of Dr Achangelo Spedalini,[§§] native of Bronte, who was formerly clinical professor at Bologna, and once filled with great credit the situation of lecturer of comparative anatomy in Pavia, but has now returned to his native country to settle in Palermo. The works on surgery are still fewer than those on medicine. Dr Rosolino Giardina de Termini, a young surgeon, who died at a very early period, has, in a Treatise on Fractures of the Neck of the Thigh-bone, made an useful alteration on Desault's bandages. Dr Lewis Salemi has published some surgical observations, and Dr Lorenzo Rizzo [*] has given an account of a remarkable case of Extra-Uterine Pregnancy. Dr Carmel Pagliati, [†] of Messina, wrote in 1821, a very good paper on a large anthrax, of which he cured a patient; and Portal, [‡] whose name has been already mentioned, has contributed not a little to surgical science. Besides these, in the last year, a paper appeared from Dr F. Cannizaro of Vizzini, on the Extirpation of Cancer and Anatomico-Chirurgical Inquiries from Dr Natale de Agro, pro-sector at the Chemical Hospital at Palermo, in the 32d Number of Brera's Journal.

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[*] Giornale di Scienze Lettere e Arti per la Sicilia.

[†] Fabricii Bibliotheca Græca, vol. xiii.

[‡] Riflessioni sopra il Mecanismo della Natura, rapporto alla conservazione, e reparazione degl' individui.—Napoli, Dominicis, 1787.

[§] Opuscoli Siciliani.

[||] Saggio fisico critico sulla dottrina di Brown.—Catania, 1803.

[¶] Analisi della pretesa nuova dottrina di Brown.—Catania, 1803.

[**] Programma di un Sistema di Medicina teoretica, ordinato secondo i principi del Methodo Analitico,—with Five Plates.

[††] Memoria sulla riforma delle cattedre di Medicina dell' Academia Palermitana presentata alla Gen. Dep. de Regi studi del regno di Sicilia; del Dot. Vicenzo Gennardo.—Palermo, Stamperia reale, 1805.

[‡‡] Avviso ai Medici sopra il Sistema di Brown, di Stefano Traso.—Palermo, 1806.

[§§] *Medicina Forense*, opera Fisico Chirurgico legale dell Dott. Filippo Sidoti.—1806.

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[*] Dissertatio Jatro-Physico Practica de Festinatione in Morbis Curandis, de hodierno Opiatorum abusu a Jac. Paulo Egroi.—Panormi, Barravecchia, 1808.

[†] Meditazioni Mediche sull uomo vivente, opera postuma del Dottor Mirone con Annotazioni del Dot. C. Maravigna.—Catania, 1809.

[‡] Del Galvanismo e dell' Elettricità Metallica trattato del Dot. Carmelo Maravigna.—Catania, 1811.

[§] Istoria dell incendio dell Etna del mese di Maggio 1819 di Carmelo Maravigna—Catania, 1819.

[||] Riflessioni Medico-Politiche sull influenza che hanno abusi della Civil Societta allo sviluppo e multiplicatione delle malattie di Giacomo Monterossi con la traduzione del giuramento d' Ippocrate.—Messina, 1815.

[¶] Elementa Physiologica et Pathologica juxta Hippocratica Principia, Auctore F. M. Scuderi.—Catania, 1815, vol ii.

[**] Discorso Academico del Dot. Pietro Russo sulla questione, perché la tisi pulmonare e divenuta cosi frequente a nostri giorni, e quali sarebbero i mezzi di guarantirsene.—Catania, 1815.

[††] Discorso sulla Scarlatina del Dot. Mariano Valenti, &c. &c.

[‡‡] Sulla Febbre osservata nell' ospedale civico di Messina ne mesi di giugno e luglio 1817, cenno di Santi Romeo, Messina, Papulardo et Nobile, 1817.

[§§] His works are, 1. Memorie due di Fisologia e Patologia Vegetabile.—Milano, 1806–8. 2. Analogia che passa tra la vita de Vegetabili e quella degli Animali.—Milano, 1807. 3. Medicinæ Compendium.—Rimini, 1815–8, vol. ii. 4. Riflessioni Patologice, sulla rottura dello Stomaco.—Milano, 1815.

Kino.—In the botanical appendix to Denham's Travels, Mr Brown has inserted the following note, App. p. 234, " Park's Second Journey, p. 124, where it is stated to be an undescribed species of that genus, ' *Pterocarpus.*' Soon after that narrative appeared, on comparing Mr Park's specimen, which is in fruit only with the figure published by Lamarck in his illustrations, (tab. 602, f. 4.) and with M. Poiret's description, (Encycl. Meth. Botan. v. p. 728,) I referred it to that author's *P. erinacea*, a name which is, I believe, adopted in the last edition of the Pharmacopœia of the London College. Dr Hooker has since published a drawing of the same plant by the late Mr Kummer, and, considering it as a new species, has called it *Pterocarpus Senegalensis.*—(*Gray's Travels in Western Africa.*")

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[*] Memoria sopra una gravidanza extra-uterina di Lorenzo Rizzo.—Catania, Pastone, 1819.

[†] Sopra un vatissimo antrace, memoria teoretico—pratica del Dot. Carmelo Pagliati.—Messina, Fiumara, 1821.

[‡] His writings are, 1. Lettera sugli stromenti di ostetricia del Cav. Assalini.—Napoli, Liporni, 1818, folio. 2. Sulla nuova maniera di allaciare le Arterie.—Giornale Enciclopedico, Ottobre 1818. 3. Lettera sull' intimo tessitura del cervello.—In the February Number of the same Journal for 1819. 4. Memoria sopra il ferro speculare.—January Number of the Giornale Encyclopedico for 1821. Riflessioni sopra una singolare eruzione petecchiale.—Pavia, Fusi, 1820.

We have received a Prospectus of an Anatomical and Physiological Society in London, with an explanatory address; with the view, we presume, of getting the names of those practitioners who are inclined to countenance such an institution. But the names of the projectors are cautiously withheld, so that there appears no other way of communicating with them except through the medium of the printer of the address, J. Davy, Queen Street, Seven Dials. We heartily wish it success, although we think the progress of pathological anatomy and comparative anatomy in the British Isles is much underrated.

We have been also requested to intimate the formation of a New Medical Theatre in the vicinity of St Bartholomew's Hospital. The teachers are—*Anatomy*, Mr Tyrrel; *Practical Anatomy*, Mr Quain and Mr Coulson; *Physiology*, Dr P. M. Roget; *Theory and Practice of Physic*, also *Materia Medica* and *Chemistry*, Dr Clutterbuck, assisted by Dr Tweedie; *Midwifery*, Dr D. Davis; *Surgery*, Mr Lawrence and Mr Wardrop; and in summer *Operative Surgery*, Mr Tyrrel.

We have just now received a Circular, proposing an Association of the Physicians of the metropolis not belonging to the College of Physicians, to be called the FACULTY OF PHYSIC IN LONDON; communications relative to which are to be sent to the Secretary, to the care of Messrs Longman and Co. Booksellers, Paternoster-row. (*Edinburgh*, 15*th September* 1826.)

In Mr Marshall's communication, which is the first article of the present number, there is an error in the date when Haddock was approved of by Dr Irwin at Sligo as a recruit for the 12th regiment. It should be the " 2d November" instead of the 22d June. The *Mistura Diabolica*, repeatedly mentioned in the same paper, is a solution of salts in which small portions of aloes and assafœtida are dissolved.

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DESCRIPTION OF THE PLATE ILLUSTRATING MR WATSON'S PAPER.

Fig. 1. Represents the anterior parts of the eye from a preparation.
e The cornea cut from its junction with the sclerotica, and turned down.
f The iris detached from its ciliary attachment, also turned down.
a The cut margin of sclerotica from which the cornea was removed.
b The anterior extremities of the ciliary processes.
c The space between the ciliary processes and lens upon which the vessels are seen running to the capsule of the lens.
d The crystalline lens.

The remaining Figures are described at p. 265 and subsequent pages.

Fig. 15 was intended to show the space between the lens and ciliary processes, in a case of cataract where the pupil was dilated with belladonna. The space appearing as a black line is well seen in contrast with the opaque lens; by it the vision of the patient was considerable when the pupil was dilated.

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